MPCA Response to Comments received on Draft NPDES/SDS Permit MN0057207 - U.S. Steel Minntac Tailings Basin During Public Notice from November 15 - December 23, 2016

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-1	U.S. Steel	Facility Operations Description needs to be updated	The proposed changes to the Facility Operations Description have been reviewed and incorporated in the updated permit as requested.
1-2	U.S. Steel	Summary of Stations needs to be updated	The requested changes have been incorporated and the stations updated.
1-3	U.S. Steel	The permit incorrectly states that the Sand River SCRS was required by the 2007 SOC. The November 14, 2007 SOC required investigating alternative mitigation strategies that included evaluating the feasibility of collecting tailings basin seepage reporting to the Sand River Watershed. It was U. S. Steel's decision to install a surface seepage collection system along the east side of the Minntac perimeter dike without any regulatory requirements, and as such requested Amendment No. 1 to allow for the installation of the system.U. S. Steel requests that the language in the permit / fact sheet be changed as follows: A minor permit modification was done in 2010 to allow for the construction of a Seep Collection and Return System (SCRS) as evaluated through a Schedule of compliance originally entered into by the Company and the MPCA on November 14, 2007, and as amended by Amendment No. 1 on February 25, 2010.	The referenced statement was removed from the facility description as a result of editing for length. The suggested correction was incorporated into the facility description in the Fact Sheet as follows: "A minor permit modification was done in 2010 to allow for the construction of a Seep Collection and Return System (SCRS) as evaluated through a Schedule of compliance originally entered into by the Company and the MPCA on November 14, 2007, and as amended by Amendment No. 1 on February 25, 2010."

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1-4	U.S. Steel	Discharges to groundwater should not be regulated as surface water under SDS Rules - U.S. Steel requests that all limits and monthly monitoring requirements be removed from all Surface Water Stations and replaced with the requirement to meet water quality standards as goals in the permit.	Minnesota Rule 7053.0155 does not limit the MPCA's authority to require dischargers to sample effluent, but instead requires samples to be collected "as may be considered necessary by the agency to adequately reflect *the condition of the waters, the composition of the effluents, and the effects of the pollutants* ...." According to part 7053.0205, at subparts 8 and 12, point source dischargers must report data to the agency: "All persons operating or responsible for sewage, industrial waste, or other waste disposal systems that are adjacent to or that discharge effluents to waters of the state shall submit a report to the agency upon request on the operation of the disposal system, the effluent flow, and the characteristics of the effluents and receiving waters. Sufficient data on measurements, observations, sampling, and analyses, and other pertinent information must be furnished as may be required by the agency to adequately evaluate the condition of the disposal system, the effluent, and the waters receiving or affected by the effluent." In addition, Minnesota Rule part 7001.0150, subpart 2, requires MPCA to impose monitoring conditions sufficient to determine whether there is compliance with Minnesota pollution control rules. The MPCA has pollution control standards for groundwater. *See* Minn. R. 7050.0221. In addition, the MPCA has authority to determine the methods of monitoring and reporting necessary to evaluate the impacts to surface waters. See Minn. R. 7050.0150, subp. 8 and Minn. R. 7053.0205, subp. 12.
1-5	U.S. Steel	The final Permit should not be issued until MPCA makes a determination on the pending UAA and SSS applications.	MPCA issues permits based on the existing water quality standards. Changes to water quality standards can be incorporated through a permit modification.
1-6	U.S. Steel	The permit should allow for anticipated changes to be made without a major modification. (Specific comments are addressed in 1-6(a-d))	Permit modifications are subject to the requirements described by federal regulations (40 C.F.R. § 122.62), as well as by state regulations (Minn. R. 7001.0190.)

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1-6a	U.S. Steel	U. S. Steel requests that the permit include language that allows SD001 permit requirements to be eliminated when the Dark River SCRS is installed and operational since the surface discharge will have been eliminated.	Consistent with the federal regulation, state rule allows MPCA to make a minor modification when it "will not result in allowing an actual or potential increase in the emission or discharge of a pollutant into the environment, or that will not result in a reduction of the agency's ability to monitor the permittee's compliance with applicable statutes and rules." Minn. R. 7001.0190 subp. 3(C). Although permits can contain conditions that allow for future contingencies or scenarios with predetermined outcomes, such as adoption of a proposed TMDL wasteload allocation to restrict discharges, eliminating an existing discharge point is not within that scope. To eliminate an existing discharge point, the permit will require a modification, regardless of the language contained in the permit.

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1-6b	U.S. Steel	U. S. Steel requests that the permit include language that allows the limits to change at all compliance and monitoring points on both the west and east side upon approval of UAA, SSS or variance requests. The permit should include a Compliance Schedule providing that: • if the MPCA determines pursuant to a U.S. Steel petition under Minn. R. 7050.0405. subpt. 1, that a beneficial use assigned to a water body does not exist or is not attainable and agency reclassifies that water body under Minnesota Statutes, section 14.09, the Permittee is not required to comply with any permit requirements imposed pursuant to any use removed as the result of the classification and the MPCA will propose a permit amendment to revise the permit accordingly. • In October 2015, the U.S. Steel submitted a Request for Site-specific Modifications of Certain Class 3C (Industrial) and Class 4A (Irrigation) Water Quality Standards" supporting a site-specific modification pursuant to Minn. Rule Minn. R. 7050.0220, subp. 7. If the U.S. EPA approves a new Site Specific Standard for permit receiving waters within the term of this permit, the MPCA will propose an amendment to this permit to establish an any appropriate effluent limit and a related compliance schedule, if any, based on the approved Site Specific Standard and the Permittee will be required to meet the new limit. • Upon completion of a rulemaking to revise the current water quality standards for Class 3 and 4 waters the Permittee shall be required to comply with effluent limits, if any, that reflect the revised water quality standards. MPCA will propose an amendment to this permit to establish an any appropriate effluent limit and a related compliance schedule, if any, for the applicable constituents based on revised water quality standard.	NPDES and SDS permits can only be modified by following the procedures in state rule. See Minn. R. 7001.0170, 7001.0190. Federal regulation defines the categories of major modifications. Consistent with the federal regulation, state rule allows MPCA to make a minor modification when it "will not result in allowing an actual or potential increase in the emission or discharge of a pollutant into the environment, or that will not result in a reduction of the agency's ability to monitor the permittee's compliance with applicable statutes and rules." Minn. R. 7001.0190 subp. 3(C). Any change to a limit that allows an actual or potential increase in the discharge of a pollutant would not comport with the state rule for minor modifications. When calculating limits, MPCA applies the water quality standard that has been approved at the time of permit issuance. See Response to Comment 1-5. A permit may contain alternative scenarios (as described in Response to Comment 1-6a), the modification to a water quality standard through a Use Attainability Analysis (UAA) or site-specific standard (SSS) does not include permit limits applicable to facilities discharging upstream of the waters with modified standards. The MPCA has not yet proposed any specific changes to the water quality standards surrounding the facility. The MPCA cannot calculate and impose permit limits for revised standards until the standards have been approved. Adoption of a revised standard is justification for MPCA to modify the permit. Minn. R. 7001.0170(C). In addition, MPCA is not imposing limits in the surface waters surrounding the facility in the final permit. As a result, there will not be compliance limits to modify on the west and east side of the basin in response to the UAA and SSS requests.
1-6c	U.S. Steel	U. S. Steel requests that the permit include language that allows the WS009 basin concentration limits (interim and final) to be changed without requiring a permit modification.	There is no issue of fact in dispute. U.S. Steel raises a legal question regarding permit modifications, which are governed by 40 C.F.R. § 122.62 and Minn. R. 7001.0170, 7001.0190. Because there is no issue of fact in dispute, a contested case hearing is not appropriate and would not aid the commissioner. Minn. R. 7000.1900, subp. 1(A).
1-6d	U.S. Steel	U. S. Steel requests that permit language be added that allows modifications to the linear regression of trout reach parameters monitored at SD003 without a major permit modification.	The use of linear regression to establish compliance at the trout reach of the Dark River based on monitoring upstream at SW003 has been removed from the permit. Conditions will now be directly monitored in the trout reach at a monitoring station located where the Dark River crosses County Highway 65.

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1-7	U.S. Steel	Permit requirements are based on arbitrary and capricious assumptions - U. S. Steel requests that all permit requirements, compliance points and related compliance parameters relative to groundwater seepage be removed until factual conclusions on groundwater flow and impact can be investigated.	Technical reports and studies conducted by U.S. Steel, its consultants and DNR uniformly support the position that the tailings basin is responsible for a radial flow of water and pollutants which impact groundwater and surface water. There is no other known or suspected source of pollution in the vicinity of the tailings basin that could account for the elevated pollutant concentrations seen in the surrounding surface waters and groundwater.
1-8	U.S. Steel	Permit requirements are based off of inappropriate and questionable data sources - Under the 'Site Geology and Hydrology' section on page 12, air photos are used to determine that there are other areas of shallow seepage. Air photos are unreliable due to the vast area of wetlands, beaver activity and ever-changing geological and hydrological conditions. Without backup data, basing permit requirements on unverified aerial photos is the very definition of arbitrary and capricious, and summary conclusions based on inspection of these photos should be removed and replaced with factual conclusions.	U.S. Steel and its consultants have submitted reports describing the areas identified in air photos as shallow seepage. Permit requirements related to this issue include seepage surveys, which will provide exactly the data that U.S. Steel says is needed. In addition, the permit requires construction of the Dark River seepage collection and return system, which U.S. Steel already agreed to construct in the 2011 SOC. Thus, the permit requirements are not arbitrary and capricious.
1-9	U.S. Steel	The requirement for U. S. Steel to request modification of the Permit within ninety days of a rulemaking applying the wild rice beneficial use designation to any waters downstream of tailings basin discharges is inappropriate. - U. S. Steel requests that language be inserted that is consistent with the re-opener language in Paragraph 1.48 of Chapter 13 of the Draft Permit regarding MPCA initiated permit modification and remove the requirement for U. S. Steel to request a permit modification within 90 days of a final rulemaking without appeal. U. S. Steel also requests that 'waters downstream' be clarified to include a specific distance that would apply to wild rice limits.	The requirement for U.S. Steel to apply for permit modification has been removed from the permit. MPCA will rely on its own authority to amend the permit if needed as a result of rulemaking. Minn. R. 7001.0170(C).

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1-10	U.S. Steel	Proposed groundwater-monitoring points GW003, 004, 005. 006, 007, and 008 bear no relation to the effects of any pollutants from the tails basin on specified water uses. The wells were installed to investigate a potential release of amine. The wells are not located at the property line and therefore are not required for compliance. GW 009, 011, 012, 013 and 014 are sufficient. Historical data shows no reasonable potential to exceed any property boundary groundwater standard, therefore there is no regulatory requirements to establish monitoring points. Additional data from these wells will not be useful for determining compliance. "Proposed groundwater monitoring points GW003, GW004, GW006, GW007, GW008 are not required, overly burdensome, excessive, arbitrary and capricious." U. S. Steel requests that monitoring points GW003, GW004, GW006, GW007 and GW008 be removed in their entirety.	Treatment, safeguards, or other control measures must be provided by the persons responsible for pollutants which are to be or have been discharged to the unsaturated zone, to the extent necessary to ensure that the "same will not constitute or continue to be a source of pollution of the underground waters or impair the natural quality thereof." Minn. R. 7060.0600, subps. 2-3. Groundwater is a water of the state, regardless of whether it is on private property. Because the permittee has already contributed to exceedance of groundwater standards, as shown by groundwater monitoring data submitted by U.S. Steel, it is reasonable to monitor groundwater. Minnesota Rule 7060.0600, subpart 6, provides that "all persons operating. . .waste disposal systems. . . which discharge effluent to the unsaturated zone. . . shall submit regularly every month a report to agency on the operation of the disposal system, the waste flow, and the characteristics of the influent, effluent, and underground waters of the vicinity. Sufficient data. . . shall be furnished as may be required by the agency to. . . reflect the condition of the disposal system, raw wastes, deposited material, effluent, residues, and the receiving or affected soils and underground waters. . . ." Thus, the MPCA has authority to require data collection and submission from the facility. State rule further requires samples to be collected in "such type, number, and frequency as may be considered satisfactory by the agency from the viewpoint of adequately reflecting the condition of the underground water." Minn. R. 7060.0800. The Minntac facility covers a large area, and consequently requires numerous monitoring points to adequately reflect the condition of the underground water in the vicinity of the facility. Evaluation of reasonable potential is an action under the Clean Water Act that is performed to evaluate the discharge of effluent to a surface water body. The groundwater monitoring at the Minntac tailings basin is in situ monitoring of the level of pollution that exists in groundwater due to U.S. Steel's operation of a disposal facility. For these reasons, the permit requires groundwater monitoring at designated locations. The wells identified by U.S. Steel are located to determine the geographic extent of pollution from the basin to groundwater across the perimeter of the basin. GW003 is located in an area of suspected high flow. GW004 is located between a well with violations of groundwater standards (GW013) and one without violations (GW014). GW006, GW007, and GW008 are the only required groundwater monitoring near the west side of the basin, and will provide data on the subsurface flow from that side of the basin as well as the effectiveness of the Dark River SCRS. Collectively, the wells will also inform estimates of outflow from the basin and could be used in modeling pollution loading. Monitoring quarterly provides data on seasonal variation.

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1-11	U.S. Steel	If MPCA does not act on the above issue and remove GW006, GW007, GW008, then the proposed groundwater monitoring locations GW006, GW007 and GW008 are arbitrary, not appropriate, redundant, and impractical. Minn. R. 7001.1060 Subp. 1 specifies that if the effluent from two outfalls is substantially identical, then MPCA shall allow sampling from only one of the outfalls to represent the discharge from both outfalls. Because GW006, GW007, and GW008 are all substantively identical MPCA should remove at least two of the monitoring points.	See response to comment 1-10. The commenter's reliance on Minn. R. 7001.1060 is misplaced. The rule applies to analyses meant to characterize the discharge for purposes of permit issuance, not permit-required monitoring. The rule expressly states that "the applicant shall perform an analysis of a sample of its effluent from each of its outfalls, except that if the commissioner finds that two or more of such outfalls have substantially identical effluents, the commissioner shall allow the applicant to analyze a sample from one of the identical effluents." Groundwater monitoring wells are not discharge outfalls. The wells are approximately a mile or more apart, and will provide information regarding variability in groundwater flow through several miles of the basin perimeter.
1-12	U.S. Steel	Proposed frequency of groundwater compliance monitoring at points GW009 and GW010 are excessive and burdensome. - U. S. Steel requests that GW009 and GW010 monitoring be reduced to once per year, which should be entirely sufficient to assess the quality of the groundwater in those locations based on the historical data already compiled.	The final permit incorporates the requested changes. Monitoring at background wells, GW009 and GW010 will be yearly in October. The reasoning for monitoring at these locations is described in the fact sheet, and the revised monitoring frequency will still fulfill that purpose.
1-13	U.S. Steel	"Proposed groundwater compliance monitoring point GW014 is arbitrary, capricious and unnecessary." U. S. Steel requests that all GW014 requirements be removed as the data demonstrate no reasonable potential to exceed water quality standards. If GW014 requirements are retained, at a minimum, limits should be removed based on the demonstrated no RPE and all parameters should be monitor only.	See response to comment 1-10. Because the MPCA needs to be able to evaluate the extent of affected groundwater, monitoring frequency and parameters will remain as described in the draft permit. In fact, GW014 is a demonstration of the need for monitoring at regular intervals: unlike existing wells to its east, GW014 has not shown the same degree of impact to date. Monitoring will continue to determine the extent of groundwater pollution.

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1-14	U.S. Steel	Proposed chloride monitoring and limits for GW012 and GW013 are arbitrary, capricious and unnecessary. U. S. Steel requests that the monitoring requirements for chlorides be eliminated, or at a minimum chloride limits for GW012 and GW013 be removed and replaced with monitor only requirements at a reduced frequency of once per year. Data for GW012 from July 2012 to October 2016 (n=14) and GW013 from May 2013 to October 2016 (n=12) shows no RPE for chloride at either of these locations. GW012 chloride averages 92 mg/L and ranges from 54 to 106 mg/L and GW013 chloride averages 34 mg/L and ranges from 26 to 48 mg/L. At least two years of data is consistent with MPCA's approach of conducting an RPE analysis after the collection of 2 years of data, pursuant to page 31 of the Draft Fact Sheet. As such, continued chloride monitoring at these locations is redundant, and would use valuable time and manpower that could be better spent in pursuit of other compliance requirements.	See response to comment 1-10. Monitoring frequency and parameters will remain as described in the draft permit. Chloride is an indicator parameter of influence from the basin. Chloride is a conservative pollutant, and background chloride concentrations are lower than those in the basin. Monitoring chloride provides a method of tracking movement of groundwater affected by the basin. This tracking is needed to obtain sufficient information to adequately reflect the affected underground waters. *See* Minn. R. 7060.0600, subp. 6.
1-15	U.S. Steel	Proposed monitoring for GW012 and GW013 are arbitrary, capricious and unnecessary. U. S. Steel requests that all parameters that are monitor only be reduced to a frequency of once per year.	See response to comment 1-10. The MPCA is requiring this monitoring to determine the extent of groundwater pollution. In addition, increasing pollutant concentrations in the basin could affect the concentrations in groundwater over time. Monitoring frequency and parameters will remain as described in the draft permit.

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1-16	U.S. Steel	The final compliance date for the proposed limits at GW012 and GW013 are not realistic, arbitrary and capricious. U. S. Steel is currently investigating a Permeable Reactive Barrier (PRB) technology to address ground water compliance issues at GW012 and GW013....The MPCA approved the amended Groundwater Sulfate Reduction Plan (GWSRP) on February 25, 2014 and is therefore well aware that the schedule to meet compliance at GW012 and GW013 will take longer than five years.... U. S. Steel requests that the permit be amended so that the requirements of Amendment No. 1 to the 2011 SOC to establish compliance with the sulfate groundwater standard as soon as possible are adopted in the permit as the Compliance Schedule to address sulfate concentrations at GW012 and GW013. Such Compliance Schedule should acknowledge MPCA's approval of the Amended GWSRP that was required under Amendment 1. Upon issuance of the reissued permit that incorporates the requirements of Amendment 1, the termination language, part 27 of the 2011 SOC, as amended, should be amended to provide that any requirement of that agreement is terminated when the requirement is incorporated into another compliance document, including the reissuance of NPDES/SDS Permit MN0057207. The 2011 SOC, as amended, should also be amended to terminate the requirements contained in Amendment 1 due to the incorporations of its requirements into the permit. Finally, the permit provision defining when the final limit takes effect for GW012 and GW013 should reflect the terms of the Amended GWSRP. The Amended GWSRP was originally developed based off of information at that time and will be updated upon installation of the PRB pilot test and MPCA approval of the sampling plan.	The compliance date has been changed to the shortest reasonable period of time, and in no case later than December 31, 2025. This is consistent with the date submitted by U.S. Steel under the GWSRP on January 31, 2014. The proposed PRB technology should be equally effective at GW012/MW12 and GW013/MW13, and could be deployed at the same time in both locations. As the comment noted, this was part of a proposal in 2014, and by setting a deadline of 2025 (eleven years later), the MPCA acknowledges that compliance may take more than five years. The MPCA expects to be able to terminate the 2011 SOC following expiration of appeal period or completion of appeal periods related to permit issuance. Alternatively, the MPCA will terminate the 2011 SOC if all required actions in the 2011 SOC are completed, consistent with the termination provision within the agreement.
1-17A	U.S. Steel	The Proposed groundwater compliance monitoring point GW011 does not contain a realistic installation schedule and should be abandoned if sampling results show no influence (similar to background). Also, the shallow well (GW011-S) is not representative of groundwater, but rather surface water. U. S. Steel requests that draft permit Chapter 9, Section 2.2, be changed as follows: "GW011: The Permittee shall install one downgradient monitoring well cluster (GW011-I and D) near the property boundary by the Admiral Lake outlet, within the bedrock trench underlying the Sand River no later than 12 months after receipt of all permits, agreements and permissions."	MPCA informed U.S. Steel that a monitoring well was needed in this location beginning in October 2013, and included this same monitoring location in the pre-public notice draft of the permit in December 2014. The permit will be amended to require installation of the well within 270 days of permit issuance to ensure that this timeframe will include a period of frozen conditions regardless of when the permit is issued. The permit provides sufficient flexibility that the well can be placed in a location to which U.S. Steel has access.

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1-17B	U.S. Steel	U. S. Steel requests that all references of the shallow (GW011-S) be removed from the permit.	See Response to Comment 1-17A. The shallow well described in the draft permit is intended to monitor groundwater that is interacting with surface water and also to evaluate vertical gradient at this location. This requirement is unchanged.
1-17C	U.S. Steel	U. S. Steel requests that language be added to Chapter 9, Section 2 that allows the GW011 nested wells to be sealed and abandoned once monitoring data shows no reasonable potential to exceed groundwater standards.	Evaluation of reasonable potential is an exercise that is performed on a discharge of effluent to a surface water body. The groundwater monitoring at the Minntac tailings basin is in situ monitoring of the level of pollution that exists in groundwater (water of the state) due to U.S. Steel's operation of a disposal facility. This is consistent with the authority in Minnesota Rule 7060.0600, subpart 6, and 7001.0150, subpart 2(B). Because the effluent concentration in the tailings basin has been increasing over time, and there is an unknown travel time from basin release to reach the groundwater monitoring stations, the MPCA expects that pollutant concentrations in wells will be variable over time and are likely to increase. For these reasons, the permit requires groundwater monitoring at designated locations.
1-18a	U.S. Steel	U. S. Steel is pursuing several mitigation options at specific points outside the tailings basin perimeter dike that would achieve compliance regardless of what constituent concentrations are in the tailings basin clear pool. In fact, the implementation of the Dark River SCRS would result in increasing WS009 concentrations. Furthermore the tailings basin is not a "waters of the State" where state water quality standards apply. Minnesota Rules 7050.0130 subpart 2 states that "disposal systems or treatment works operated under permit or certificate of compliance of the agency are not "waters of the state.""	The MPCA agrees that the tailings basin is part of a disposal system and is therefore not a water of the state. The MPCA agrees that the Dark River SCRS may result in higher pollutant concentrations in the basin. The MPCA considered this fact in its revisions to the permit, and it was a consideration in MPCA's decision to remove the interim limit in the Final 2018 permit. See Response to Comment 1-18g.
1-18b	U.S. Steel	The MPCA has authority to regulate basin discharges to waters of the state but lacks authority to establish a compliance point within the tailings basin.	The MPCA disagrees with the assertion that it lacks the authority to establish conditions on water within the tailings basin. The MPCA is authorized to issue permits "requiring the discontinuance of the discharge of sewage, industrial waste or other wastes into any waters of the state resulting in pollution in excess of the applicable pollution standard." Minn. Stat. § 115.03, subd. 1(e)(1). The tailings basin is discharging (as defined in state law, Minn. Stat. § 115.01, subd. 4) wastewater into waters of the state (groundwater). As stated in Minnesota Rule 7060.0800, the MPCA has the authority to determine the compliance point for groundwater standards. As discussed in Response to Comment 1-18c, groundwater is a water of the state. U.S. Steel has reported to MPCA that groundwater at the property boundary exceeds the groundwater quality standards established in Minnesota Rule 7050.0221, subpart 1.

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1-18c	U.S. Steel	Compliance with groundwater standards for sulfate is measured at the property boundary. Property boundary groundwater compliance issues have been identified at two specific locations, GW012 and GW013, both of which are being addressed through the GWSRP that should be incorporated, as noted above, into the Compliance Schedule for compliance at GW012 and GW013. Requiring sulfate limits to be met at the compliance points AND upgradient noncompliance points is inappropriate, redundant, and impractical.	See response to comment 1-10. Groundwater is a water of the state regardless of property boundaries. Minn. Stat. § 115.01, subd. 22. The MPCA regularly uses the property boundary as a compliance point because at many facilities that is the only place to measure groundwater moving away from the facility. However, Minnesota Rule 7060.0800 provides the agency discretion in determining the point of compliance: "In making tests or analyses of the underground waters of the state, or of sewage, industrial wastes, or other wastes, to determine compliance with the standards, samples shall be collected *in such manner and place* and of such type, number, and frequency *as may be considered satisfactory by the agency* from the viewpoint of adequately reflecting the condition of the underground water and the effects of the pollutants upon the specified water uses." In the case of a facility with a large area of property, other compliance points (e.g., a river fed by groundwater) are appropriate to protect the specified water uses. The MPCA has revised the permit to remove the surface compliance points and to focus on the basin sulfate concentration as a way to minimize the underlying source of pollutants, rather than in situ treatment. Such in situ treatment may not remediate all groundwater sufficiently to meet standards, due to the water volume and large area of treatment needed.

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1-18d	U.S. Steel	As described in more detail below, collected samples in the tailings basin for the purpose of compliance with water quality standards related to groundwater use does not reflect the condition of the underground water and does not it reflect the effect of the pollutants upon the specified water uses. In addition to a lack of regulatory authority to establish a compliance point within the tailings basin, the MPCA cannot support establishing a compliance limit in the tailings basin that relates to compliance with the numeric water quality standard applicable at the U. S. Steel property boundary. It is overly simplistic for the MPCA to base permit conditions on a statement that it is "axiomatic" that prevention of a pollutant release to the environment is easier and less costly in the long run than post-release cleanup measures. MPCA's authority does not come from axioms and the facts regarding the tailings basin cast doubt in the applicability of the axiom here given the complexity of sulfate reduction and the complexity of groundwater modeling. The MPCA does not have a basis to conclude that meeting any specific concentration in the tailings basin is a relevant measure of the legally required compliance at the property boundary. The MPCA acknowledges that it does not have a basis for a compliance limit in the permit, stating in the permit fact sheet that the "goal" of the investigation into the sources and flowpaths of contaminants from the tailings basin is "to determine a basin sulfate concentration that would lead to compliance with all applicable surface water and groundwater quality standards during operation and closure."	The MPCA does not dispute that concentrations in the tailings basin are not identical to groundwater concentrations. However, U.S. Steel's own submissions, as well as others, show that water moves from the tailings basin to groundwater and carries pollutants with it. Regarding the authority to set limits other than the property boundary, see response to comment 1-18c. In addition, Minnesota Rule 7001.0150, subpart 2(B) requires the MPCA to include schedules of compliance that will lead to compliance with Minnesota rules. U.S. Steel has submitted monitoring data demonstrating exceedances of water quality standards adopted in rule at part 7050.0221, subpart 1(B) and the MPCA is obligated to impose a schedule to return the facility to compliance. U.S. Steel has not proposed (and the MPCA is not aware of) any method that would treat all groundwater that may be affected by the basin, other than treating the basin water before it enters groundwater. U.S. Steel itself has proposed such in-basin treatment to the MPCA three times in the last twelve years. The idea of treating the basin and imposing a limit was not based purely on axiom -- it was based on MPCA's expertise on wastewater treatment, legal requirements, and U.S. Steel's position for over a decade. Finally, the basin limit in the permit was calculated by modeling conducted by U.S. Steel. The comment does not provide a reasonable basis to support any other limit, or a basis to conclude that no limit is necessary. The MPCA agrees that the current understanding of groundwater movement at the site may evolve, as is always the case, but the available data unquestionably demonstrate the necessity of treatment. The permit requires the type of data collection (and allows sufficient time) for U.S. Steel to develop a reasonable basis for an alternative limit if one is needed.

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1-18e	U.S. Steel	The MPCA must acknowledge that the investigation will show that concentrations in the Tailings Basin will vary considerably due to a variety of factors, including evaporation and precipitation rates that vary from year to year, and that the MPCA already has information showing that it is unable to establish a compliance limit in the tailing basin that relates to property boundary compliance. The MPCA acknowledges in the permit fact sheet that the characteristics of the groundwater flow preclude establishing a compliance limit in the tailings basin as a reasonable measure of compliance at the property line... [quotes fact sheet]. And importantly, the amended GWSRP approved by the MPCA describes hydraulic conductivity testing at MW012 that concluded that groundwater velocity equated to approximately 50 feet per year.	The MPCA agrees that the pollutant concentrations in the tailings basin vary over time due to multiple factors, including those cited in the comment. The MPCA was aware of this before the public notice in 2016. The permit accounts for this fact by defining compliance with the basin limit to be meeting the limit for 6 consecutive months, and maintaining at or below the limit thereafter. See permit at part 5.28.61. As noted in Response to Comment 1-18d, available data do not allow precise evaluation of groundwater movement. U.S. Steel and the MPCA have both made statements regarding the release of water from the basin to groundwater. The MPCA has considered the hydraulic conductivity testing in the comment, but concluded that the results at a single well do not provide a reasonable basis to estimate groundwater movement at every point within the 13 square mile basin and surrounding property.
1-18f	U.S. Steel	That all leads to the unavoidable conclusion that the MPCA cannot technically justify creating an enforceable compliance limit in the Tailings Basin that is hundreds, if not thousands, of feet away from the legal compliance point. The tailings basin is a 13-square mile feature with dynamic and ever-changing characteristics. The measurements of sulfate concentrations within the tailings basin will vary based on location of the measurements within the basin and any number of naturally occurring events including precipitation and evaporation rates. The interim limits measured at the tailings basin create unreasonable and irrelevant standards at an internal waste stream that is legally measured at the point of compliance at the property line.	For the reasons in Response to Comments 1-18a through 1-18e, the MPCA disagrees with the conclusion in the comment. The MPCA disagrees with the compliance point arguments, as described in response 1-18b and 1-18c. The MPCA agrees that basin concentrations vary over time, as described in response to comment 1-18e, but does not find this affects the permit conditions. The MPCA disagrees that basin limits are unreasonable, as described in response to comment 1-18d, because such limits are necessary and required by law.

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1-18g	U.S. Steel	The interim and final sulfate limits proposed for WS009 are duplicative, arbitrary and not based in fact. Requiring an interim limit of 800 within 5 years of permit issuance will not achieve compliance with the groundwater standards at the property boundary. In fact, the stated 800 mg/L was based on projected clear pool concentrations 5 years after installation of dry controls on four Agglomerator lines. To arbitrarily require this limit when MPCA knows the technology is not installed, and will not be, is to flagrantly ignore the facts. In addition, the final sulfate limit of 357 mg/L should not be considered to be valid since it was based on strictly conservative groundwater sulfate modeling that MPCA acknowledged was incomplete. Subsequent research by MN DNR has clearly demonstrated that sulfate is not a conservative constituent during subsurface transport and can be reduced biologically, which was not included in the model from which the 357 mg/L resulted. Although MPCA appears to allow for a revised number to be submitted the compliance schedule does not allow for the time for additional modeling to be conducted. It also does not reflect the fact that having duplicative upstream compliance limits on non-compliance points is arbitrary and capricious.	U.S. Steel admits in its response that it could have achieved the interim limit had it followed through on its obligation under the 2011 SOC to install dry controls. Despite the 2011 SOC identifying a potential path to achieve this reduction, the MPCA has removed this interim limit for several reasons. First, the permit does not mandate a particular treatment method, and the expected reductions under the SOC may not align with a different treatment process. Second, conditions in the basin have changed since the SOC was signed in 2011 -- concentrations are, on average, higher than those relied on at the time of the SOC. Third, implementation of the Dark River SCRS may increase basin concentrations. Finally, MPCA revisions made in the Final 2018 Permit extend the Final Design due date from 37 months to 48 months after permit issuance, making it less likely that reductions could be achieved within five years. Regarding the final limit, MPCA is aware that the modeling generating the concentration is based on incomplete information. The MPCA was already aware at the time it developed the draft permit that sulfate is not strictly conservative, but the comment ignores the fact that sulfate can also be released through biogeochemical reactions, including continued oxidation of sulfur-bearing minerals in the fine and coarse tailings contained in the basin. As a result, there is no assurance that the reduction identified in the comment would result. The comment does not provide any basis for an alternative calculation of a limit that would lead to meeting water quality standards. The MPCA revised the schedule of compliance in the final permit to allow more time to propose an alternative basin limit. In addition, the first limit the facility will have to meet is ten years after permit issuance, providing ample time to revise modeling before the limit takes effect. To address the final point in the comment, the permit removes other limits to avoid duplication.
1-19	U.S. Steel	Remove WS009 in its entirety, including all associated compliance limits and monitoring requirements. If it is not removed, then parameters should be monitored only at a reduced frequency of once per year.	See Response to Comment 1-10 and 1-18c regarding the property boundary issue and Response to Comment 1-18b for the MPCA's authority to require U.S. Steel to meet conditions within the basin. MPCA has removed compliance limits at locations other than the basin. The MPCA has removed the 800 mg/L interim limit for sulfate due to other changes made to the Final Permit that extend the Final Design due date from 37 months to 48 months after permit issuance.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-20	U.S. Steel	SD001 (Seepage outfall 020) – Footnote 3 (Final Limits) should be 12 months after permit effective date. U. S. Steel requests that Footnote 3 state that final limits reflect permit issuance date rather than January 2018.	The MPCA has revised the permit to remove final limits at this monitoring location because the permit prohibits discharge from SD001 after completion of the seepage collection and return system. Effluent limits are unnecessary and are not appropriate when there is no authorized discharge. Any discharge would violate the permit; any discharge causing pollution would also violate the prohibition against pollution in Minnesota Rule 7050.0210, subpart 13.
1-21	U.S. Steel	SD001 (Seepage outfall 020) - Footnotes 1 (interim limits) and 3 (final limits) for Bicarbonates, Hardness and Total Dissolved Solids are contradicting. U. S. Steel requests monitoring only until seep collection installed Once seep collection is installed this monitoring location should be removed from the permit.	The final permit does not impose interim and final limits at this monitoring location. However, complete removal of the monitoring location from the permit will need to be addressed in a permit modification or subsequent permit reissuance. This raises legal issues regarding permit modification requirements. See Response to Comments 1-6 through 1-6c.
1-22	U.S. Steel	Final limits for SD001 occur after the requirements for installation of the Dark River Seep Collection and Return System. U. S. Steel requests that language be included in the permit that removes all requirements associated with SD001 upon completion of the Dark River SCRS including, but not limited to: monitoring requirements, interim and final limits, reporting, submittals, etc.	The permit has been revised to remove the final limits at this location because discharge will be prohibited after the installation of the Dark River SCRS, as described in Response to Comment 1-20. As discussed above in Response to Comments 1-6 through 1-6c, removal of the monitoring location from the permit is something that will need to be addressed in a subsequent permit reissuance. After the Dark River SCRS is installed and seepage no longer exits at the SD001 location, the Permittee can indicate "no discharge" on the monthly DMR.
1-23	U.S. Steel	The Draft Permit requirement for mercury monitoring of SD001 is unnecessary. Based on 3 mercury results (one from the 2009 permit renewal application and two subsequent results from monitoring performed in 2014), no RPE exists for mercury at SD001 (max result of 1.2 ng/L, resulting in a PEQ of 3.6 ng/L (CV=0.6, n=3) that is less than the limiting criteria of 6.9 ng/L). As such, mercury monitoring requirements should be eliminated. Removal of all mercury monitoring requirements	The basis and method of calculating reasonable potential is a policy issue within the MPCA's discretion. The method used in this case was consistent with U.S. EPA's guidance. The MPCA considered the data provided in the comment when evaluating reasonable potential for mercury at this location. The multiplier for determining critical effluent concentration given a CV=6 and n=3 is 5.6, which gives a result of 6.7. This value is very close to the 6.9 ng/L WQS. There are numerous mercury impairments downstream of this discharge, and the MPCA needs information to ensure that this discharge does not contribute to those impairments. The permit requires continued monitoring for mercury at a frequency of twice per year. This will provide greater than 10 samples for reasonable potential calculation should this discharge fail to be eliminated prior to the 5 year permit term. The MPCA notes that in comment 17, U.S. Steel takes the position that the MPCA should calculate reasonable potential after 12 samples, rather than the six referenced in this comment. Regarding the authority to require the mercury monitoring in question, see Response to Comment 1-4.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-24	U.S. Steel	The Draft Permit requires SD001 monitoring for both total and dissolved mercury as well as a total suspended solids (TSS) sample specific to mercury. If the MPCA does not remove mercury monitoring in its entirety based on the previously described no RPE, U. S. Steel requests for monitoring of total mercury only, removing the requirements of a TSS mercury grab and the dissolved mercury sampling requirement.	Sampling frequency in the final permit has been reduced to twice per year. The MPCA has authority to require sampling sufficient to determine effluent concentrations and potential effects on waters of the state. The MPCA's authority to require monitoring is discussed more fully in Response to Comments 1-4 and 1-10. The sampling for both parameters is needed because mercury is often associated with TSS in effluent. The sampling required by the permit is consistent with current MPCA strategy. *See* "Permitting strategy for addressing mercury in municipal and industrial wastewater permits," June 2013, available at https://www.pca.state.mn.us/sites/default/files/wq-wwprm1-16.pdf. This strategy seeks to implement reductions in the 2008 statewide total maximum daily load for mercury. Evaluating the TSS-mercury association will provide data to advance the MPCA's goal to restore waters downstream from the facility that fail to meet water quality standards.
1-25	U.S. Steel	U. S. Steel is questioning the Reasonable Potential-to-Exceed (RPE) analysis performed to develop interim limits and final limits for sulfate and specific conductance at SD001. U. S. Steel is also questioning the application of final limits for bicarbonates, hardness, and TDS at this time. Provide more details on the RPE calculations and development of interim and final limits. Remove interim limits for sulfate and specific conductance. Remove final limits for bicarbonates, hardness, and TDS pending the RPE evaluation after one year of data collection.	The method of conducting a reasonable potential analysis is a policy decision within the MPCA's discretion, as described in Response to Comment 1-23. However, that is no longer at issue because the MPCA has revised the permit to eliminate the limits referenced in the comment. Station SD001 will not be assigned limits for the period prior to the completion of the Dark River SCRS because the MPCA has determined that treatment during this time period is not feasible. Completion of the SCRS under the permit schedule will eliminate surface discharge at this location and is the fastest available treatment. Without an immediate method to treat the discharges, the MPCA determined an interim limit is not appropriate because there is no assurance it could be met.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-26	U.S. Steel	Application of water quality standard to protect the Trout Reach of the Dark River are arbitrary and capricious. The Dark River Trout reach is over 10 miles downstream from Minntac discharges, and receives additional tributary inputs from sources beyond U. S. Steel's control. It is possible that measured exceedances of applicable water quality standards or permit limits proposed for the Dark River Trout reach could be from sources other than Minntac discharges. To place compliance limits on a facility at a point 10 miles downstream which receives additional inputs is arbitrary and capricious.... U. S. Steel requests that all limits that pertain to the Dark River Trout reach be removed from the permit (SW003). If the agency refuses to remove the associated limits, the compliance should be measured at the trout reach at proposed location SW004 (Dark River CR65).	The requested changes have been made due to the uncertainty of downstream dilution. To the extent the comment questions the MPCA's ability to require monitoring, see Response to Comment 1-4. Because the MPCA has authority to require monitoring, the permit provides for the monitoring of compliance with Class 1B parameters at the SW004 surface water station. The MPCA notes that the possibility that there may be other sources of pollutants does not preclude a determination that reasonable potential exists, nor does it preclude the imposition of effluent limits. Federal regulations specifically provide that reasonable potential exists if a discharge may *contribute* to an excursion above water quality standards -- it need not be the sole cause. 40 C.F.R. § 122.44(d)(1)(i). In addition, the analysis must take into consideration existing controls on point and nonpoint source sources of pollution. *Id.* Thus, the existence of other sources is not dispositive in the reasonable potential analysis. The EPA's NPDES Permit Writers' Manual provides: "A reasonable potential analysis is used to determine whether a discharge, alone or in combination with other sources of pollutants to a waterbody and under a set of conditions arrived at by making a series of reasonable assumptions, could lead to an excursion above an applicable water quality standard."

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-27	U.S. Steel	MPCA developed a mathematical relationship between the water quality in the Dark River at Cty Rd 668 and that at Cty Rd 65, representative of water quality entering the Dark River Trout Reach. Chapter 1, Section 1.27 (page 26 of the draft permit) requires 12 consecutive monthly samples be collected from each of the sampling locations following initial operation of the Dark River SCRS. If the mathematical relationship changes by more than 5% based on the 12 month sampling period, an application for permit modification must be submitted. No guidance has been provided on which of the components of the mathematical relationship would trigger permit modification. Further, considering the variation in the limited data set (R2 = 0.78)_it is very likely that there will be a greater than 5% change to one or more of the components of the mathematical relationship following SCRS implementation. U. S. Steel requests that Chapter 1, Section 1.27 (page 26 of the draft permit) be eliminated. U. S. Steel further requests that if compliance monitoring of the Dark River Trout Reach is deemed necessary following implementation of the west side SCRS, that monthly sulfate monitoring be conducted at CR 65 (SW004) for one year. If after 12 months of monitoring there is no exceedance of the Class 1B sulfate standard, monitoring at this location will be terminated.	The final permit does not rely on the mathematical relationship between water quality conditions at County Road 668 and County Road 65. Monitoring for parameters related to the Class 1B use for the portion of the Dark River that is a designated trout reach will now be at the SW004 surface water station, located where County Road 65 crosses the Dark River. The MPCA does not propose to terminate the monitoring because of the increasing concentrations in the basin and the potential for additional groundwater to reach surface water over time. To the extent the comment disputes MPCA's legal authority to require monitoring, see Response to Comments 1-4 and 1-10.
1-28	U.S. Steel	U. S. Steel is questioning the analysis that estimates concentrations at the start of the trout reach based on SD001 data. Several flow values are used in this evaluation but the basis and appropriateness of the flow rate of 2.63 cfs used for "the flow exiting the Minntac tailings basin westward" is unknown (e.g., does this value include the SD001 flow of 0.21 cfs?). Also, there appear to be mathematical errors in development of at least one dilution ratio (0.43) and the dilution ratios are applied inconsistently in Table 5. U. S. Steel requests that MPCA provide more details on the basis of the calculations and exactly which permit requirements result from the analysis. Additionally, U. S. requests that MPCA redo the analysis with the appropriate flow ratios.	MPCA has reevaluated the reasonable potential analysis. The comment correctly identifies the method by which MPCA calculated the reasonable potential in the draft permit, including a calculation error. The final permit does not impose limits on SD001 or in the trout reach. See Response to Comment 1-20 regarding the removal of the SD001 limit and Response to Comment 1-26 regarding removal of the trout reach limits.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-29	U.S. Steel	The SW003 sulfate limitation is inappropriate and unbased. Furthermore the requirements in Chapter 1, 1.27 are arbitrary, capricious, inappropriate and burdensome. U. S. Steel requests the WS003 limitation for sulfate (525 mg/L) be removed and replaced with monitor only. Additionally the monitoring and associated requirements in Chapter 1, 1.27 of the Permit should be eliminated. If the Chapter 1, 1.27 requirements are not removed, clarification on implementation (e.g. what aspect of the relationship, which parameters) of the requirement is requested.	The final permit does not include a sulfate limit at SW003 raised in the comment. The MPCA acknowledges that the relationship relied on in the draft permit would be difficult to implement and enforce, and could create issues regarding permit modifications. Monitoring for parameters related to the Class 1B use for the portion of the Dark River that is a designated trout reach will now be at the SW004 surface water station, located where County Road 65 crosses the Dark River. The requirement in Chapter 1, part 1.27 of the draft permit has been removed. To the extent the comment disputes MPCA's legal authority to require monitoring, see response to comment 1-4 and 1-10.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-30	U.S. Steel	MPCA is requiring U. S. Steel to monitor Surface Water Stations SW001, SW003, SW005, SW006, SW007, and SW008 for compliance in addition to requiring compliance at monitoring points that would be more representative of Tailings Basin discharges (SD001, GW009, GW012, GW013, GW014). * There is evidence that the streams are fully supporting and meeting their designated uses; other requirements are already imposed on the discharge; U.S. Steel is not the sole contributor to the surface waters; the remediation measures may impact the surface water quality; the state must determine waters failing to meet standards and assign limits according to section 303(d) of the CWA; the majority of tailings basin discharges will be eliminated with SCRS installations, rendering additional monitoring unnecessary; more appropriate and less costly alternatives could provide representative data. * U. S. Steel requests that compliance monitoring points (and any associated limits) SW001, SW003, SW005, SW006, SW007, and SW008 be removed.	Because the precise volume, pollutant concentration, and movement of the basin seepage that impacts the surface waters surrounding the basin is unknown, monitoring at SD001 and monitoring wells is insufficient to predict the resultant impacts on surface water quality. It would not represent the quality at other monitoring points after accounting for water movement and potential dilution. Therefore, direct monitoring of the surface water bodies themselves is necessary to determine the pollutant concentrations in surface waters. As described in Response to Comments 1-4 and 1-10, the MPCA has authority to require monitoring, testing, and reporting sufficient to yield representative data to determine compliance with terms of permits and compliance with state and federal pollution control rules. See Minn. R. 7001.0150 subp. 2. Monitoring surface water around the facility is necessary to determine whether water quality standards are being attained. In addition, the MPCA has authority to determine the methods of monitoring and reporting necessary to evaluate the impacts to surface waters. See Minn. R. 7050.0150, subp. 8, and Minn. R. 7053.0205, subp. 12. Regarding the specific rationales in the comment: the MPCA does not believe that the streams are fully supporting and meeting their designated uses based on data submitted by U.S. Steel. The permit has been revised to remove various other surface water monitoring requirements. The MPCA does not dispute that the Dark River SCRS may affect basin water quality in Response to Comment 1-18a. The impairment and TMDL process is not the only method by which the Clean Water Act authorizes permit limits to be established (see 33 U.S.C. § 1311). Although surface water discharges must be eliminated by the SCRS installation, the comment provides no evidence that discharge to groundwater will cease. As described above, the MPCA concluded that alternative monitoring locations do not provide representative data, and the comment did not provide any facts to contradict that conclusion.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-31	U.S. Steel	SW005 (Little Sandy Lake Inlet) and SW007 (Admiral Lake) are both monitoring points in same receiving stream, and therefore SW007 (Admiral Lake) is redundant and not necessary. U. S. Steel requests that compliance monitoring point SW007 be removed in its entirety. If MPCA declines to remove SW007, then U. S. Steel requests time to establish a monitoring point at this location. The schedule must include time allowance for all required permits, agreements and permissions, infrastructure improvements for safe access as well as flow measurement, internal capital approval, engineering design, etc. SW007 and SW005 compliance monitoring points are substantially identical and characterize the same discharge. SW007 is not safely accessible to U. S. Steel and/or MPCA. No time is included in the compliance schedule to establish a monitoring point at this location. The inclusion of a monitoring point at SW007 would require impacts to wetlands to establish and gain safe access. There is no defined channel or means to obtain flow measurement at SW007. If SW007 is left in the permit, then U. S. Steel requests time to establish the monitoring point, including permits and infrastructure, and requests that SW005 be removed from the permit in its entirety due to the fact that it is substantially similar to SW007 and in the same receiving water.	Based on available hydrogeologic information, MPCA believes that the Sand River and associated lakes (Admiral, Sandy and Little Sandy) likely receive inflows from groundwater and surface water containing pollutants from the basin. Because the specific entry points and flows into this surface water system are not well known, additional monitoring at locations within this stream and lake system are needed. To the extent the comment disputes MPCA's legal authority to require monitoring, see Response to Comments 1-4, 1-10, and 1-30. To the extent the comment relies on Minn. R. 7001.1060, see response to comment 1-11. The MPCA has removed flow monitoring requirements at the SW005 and SW007 locations, which should relieve the need to install infrastructure. MPCA suggests that there are alternative methods to access sites without wetland impacts. For example, U.S. Steel could use an unmanned aerial vehicle (UAV) to conduct monitoring at the SW007 location to mitigate personnel safety issues.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-32	U.S. Steel	Proposed monitoring at SW001 (Station 701) is arbitrary and capricious. SW001, SW005 and SW007 compliance monitoring points are substantially identical and characterize the same discharge. If the effluent from two outfalls is substantially identical, MPCA shall allow the discharger to sample from one of them instead of both. See Minn R. 7001.1060. Because the effluent at SW001, SW005 and SW007 is substantially identical, U. S. Steel has no regulatory obligation to sample from all of these locations. * The MPCA's statements in the fact sheet for monitoring have no regulatory basis. * There is no regulatory reason to monitor or impose limits at SW001 (Sandy River Station 701). SW001 (Sandy River Station 701) is redundant because of proposed compliance points SW005 (Little Sandy Lake Inlet) and SW007 (Admiral Lake) are both upstream in same water body. U. S. Steel requests that compliance monitoring point SW001 be removed in its entirety. If SW001 is left in the permit, then U. S. Steel requests that SW005 and SW007 be removed from the permit in its entirety due to the fact that they are substantially similar to SW001 and in the same receiving water.	To the extent the comment disputes MPCA's legal authority to require monitoring, see Response to Comments 1-4, 1-10, and 1-30. To the extent the comment relies on Minn. R. 7001.1060, see Response to Comment 1-11. The monitoring point are not outfalls controlled by part 7001.1060. The basis for monitoring in multiple locations on the east side of the basin is also described in Response to Comment 1-30. Based on available hydrogeologic information, it is likely that the Sand River and associated lakes (Admiral, Sandy and Little Sandy) receive inflows from groundwater and surface water containing pollutants from the basin. Because the specific entry points and flows into this surface water system are not well known, additional monitoring at locations within this stream and lake system are needed. Considering the increasing pollutant concentrations in the basin and potential groundwater travel time, past monitoring may not reflect future conditions.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-33	U.S. Steel	Proposed monitoring point SW006 (Timber Creek) is arbitrary and capricious. U. S. Steel requests that compliance monitoring point SW006 be removed in its entirety. ... * It is substantially identical to other outfalls, does not characterize Minntac's effluent, is not accessible, requires time to be established, requires impacts to wetlands, has limits based on uses that do not exist, has no channelized flow, will have no impact after SCRS installation, and other beneficial uses do not exist. * If MCPA declines to remove SW006, then U. S. Steel requests time to establish a monitoring point at this location. The schedule must include time allowance for all required permits, agreements and permissions, infrastructure improvements for safe access as well as flow measurement, internal capital approval, engineering design, etc. U. S. Steel requests 12 months from receipt of all permits for data collection to begin. Likewise, if SW006 is left in the permit, then U. S. Steel requests that SW003 and SW008 be removed from the permit in its entirety due to the fact that they are substantially similar to SW006 and in the same receiving water.	To the extent the comment disputes MPCA's legal authority to require monitoring, see response to comment 1-30. U.S. Steel's comment relies on rule language applicable to facility outfalls, but the point in question is for surface water monitoring. The MPCA has removed the requirements to monitor flow at this location. Removal of flow monitoring should greatly reduce the time needed to establish a monitoring point at this location since no weir or other flow channelization structure will need to be installed.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-34	U.S. Steel	Proposed monitoring point SW008 (Dark River near Basin) is arbitrary and capricious. U. S. Steel requests that compliance monitoring point SW008 be removed in its entirety. * It is substantially identical to other outfalls, does not characterize Minntac's effluent, is not accessible, requires time to be established, requires impacts to wetlands, has limits based on uses that do not exist, has no channelized flow, will have no impact after SCRS installation, and other beneficial uses do not exist. * If MCPA declines to remove SW008, then U. S. Steel requests time to establish a monitoring point at this location. The schedule must include time allowance for all required permits, agreements and permissions, infrastructure improvements for safe access as well as flow measurement, internal capital approval, engineering design, etc. U. S. Steel requests 12 months from receipt of permits for data collection to begin. Likewise, if SW008 is left in the permit, then U. S. Steel requests that SW003 and SW006 be removed from the permit in its entirety due to the fact that they are substantially similar to SW008 and in the same receiving water.	To the extent the comment disputes MPCA's legal authority to require monitoring, see response to comment 1-30. Based on available hydrogeologic information, the MPCA believes that the Dark River receives inflows from groundwater and surface water containing pollutants from the basin. Because the specific entry points and flows into this surface water system are not well known, additional monitoring at locations within this stream and lake system are needed to determine the extent that groundwater influences the surface water. The monitoring will also allow an evaluation of the effect of the Dark River SCRS on the seepage from the central portion of the basin, upstream of the Timber Creek outlet to the Dark River. As the comment itself notes, "Insufficient information exists regarding the groundwater flow patterns and groundwater-surface interactions along the streams immediately adjacent to the Minntac tailings basin west perimeter dike to know at what point the river has ceased receiving tailings impacted contributions." The MPCA has removed the requirements to monitor flow at this location. Removal of flow monitoring should greatly reduce the time needed to establish a monitoring point at this location since no weir or other flow channelization structure will need to be installed.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-35	U.S. Steel	The requirement to monitor for sodium and potassium is unnecessary, arbitrary and capricious. U. S. Steel is already complying with the standard that sodium needs to be less than 60% of the total cations based on historical sampling results and the nature of the Minntac recirculating process water which passes through the tailings basin. From two sampling events at SD001 during 2014 for total and dissolved cations (calcium, magnesium, potassium and sodium), the percentage of sodium with respect to total cations ranged from 12.5% to 12.6%. Similar percentages were measured from sampling of the Dark River at County Road 668 during 2011 - 2014. Analysis of thirteen samples resulted in sodium accounting for 10.1% - 13.6% of the total cations measured. Furthermore, magnesium and calcium dominate the cation composition so monitoring of potassium is also unnecessary. For the 2014 SD001 data described above, the corresponding potassium percentages ranged from 3.6% to 3.7%. U.S. Steel requests that all monitoring for dissolved potassium and total sodium be removed. At a minimum the dissolved potassium monitoring requirements should be removed.	The MPCA has revised the permit to remove the requirement to monitor for sodium and potassium at all monitoring locations. There has been little variation in past monitoring, and the MPCA does not have a basis to expect the ratio to change in the future.
1-36	U.S. Steel	Flow measurements at all surface water stations are arbitrary and capricious. The water quality standards, and therefore the limits included as permit conditions, are concentration based. Therefore compliance can be determined simply by analyzing the grab samples required by the permit. Although flow might be interesting information, and may potentially inform where contaminant mass may be entering the system, there is no regulatory basis for requiring the flow monitoring and does not specifically address compliance with applicable standards at the points of compliance. U. S. Steel requests that all flow measurement requirements associated with the surface water stations be removed from the permit.	To the extent the comment disputes MPCA's legal authority to require monitoring, see response to comment 1-30. MPCA has removed the flow monitoring requirement at all stations except SW003 (Dark River at CH 668) and SW001 (Sand River at Hwy 53). Flow monitoring at SW003 is necessary to assess possible hydrologic changes in the Dark River related to the proposed Seepage Collection and Return System. Similarly, flow monitoring at SW001 is necessary to assess whether fluctuations in pollutant concentrations in the Sand River are due to changes in basin seepage and remedial efforts, or simple dilution. This assessment is a component of evaluating the effectiveness of the Sand River SCRS.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-37	U.S. Steel	The Class 4B narrative standard for sulfate should not be included as a numeric limit in the permit. MPCA has imposed a sulfate effluent limit of 1,000 mg/L at all of the proposed surface water monitoring stations based on interpretation of the following narrative statements found in Minn R. 7050.0224, subp. 3: "The quality of Class 4B waters of the state shall be such as to permit their use by livestock and wildlife without inhibition or injurious effects," and "Additional selective limits may be imposed for any specific waters of the state as needed." MPCA did not follow legal procedure to impose numeric limits in the permit. In order to establish a numeric limit based on narrative criteria in the permit, the permit writer must follow the procedure for establishing limits based on BPJ. U. S. Steel requests the numeric sulfate effluent limit for Class 4B waters be removed from the permit. Alternatively, U. S. Steel requests, in lieu of a sulfate effluent limit of 1,000 mg/L, the following permit condition be included in the permit: "The quality of Class 4B waters of the state shall be such as to permit their use by livestock and wildlife without inhibition or injurious effects."	The MPCA considered the comment and revised the permit to make the requested change. The 1000 mg/L sulfate numeric interpretation of the Class 4B narrative is not included in the final permit. The permittee must still comply with narrative water quality standards in Minnesota Rules chapter 7050. See Permit at 5.36.161.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-38	U.S. Steel	It is inappropriate to apply Class 3C and 4A water quality standards to Timber Creek and portions of Dark River where no use exists (SD001, SW006 and SW008). U. S. Steel requests that all Class 3C and 4A water quality standards be removed for compliance monitoring points on the upper Dark River and Timber Creek (SD001, SW006, and SW008); or, alternatively, provide language in the permit to modify/remove these limits and/or the surface water monitoring stations if a UAA is approved by MPCA without the need for a major permit modification. U. S. Steel requests the parameters hardness, total dissolved solids, specific conductance, and alkalinity be removed. If the agency does not remove the requested standards, then U. S. Steel requests that the Class 3C and 4A limits be modified in accordance with the Site Specific Standard Request that USS submitted in October 2015.	The Class 3C and 4A standards apply to the waters identified. See Minn. R. 7050.0430. MPCA is in the process of addressing the request for a site-specific standard and the petition for a Use Attainability Analysis. The permit does not require interim limits at these locations because there is no treatment means in place at this time. The compliance schedule requires the permittee to estimate when the applicable limits can be met based on the treatment methods they will implement. NPDES and SDS permits can only be modified by following the procedures in state rule. See Minn. R. 7001.0170, 7001.0190. Federal regulation defines the categories of major modifications. Consistent with the federal regulation, state rule allows MPCA to make a minor modification when it "will not result in allowing an actual or potential increase in the emission or discharge of a pollutant into the environment, or that will not result in a reduction of the agency's ability to monitor the permittee's compliance with applicable statutes and rules." Minn. R. 7001.0190 subp. 3(C). Any change to a limit that allows an actual or potential increase in the discharge of a pollutant would not comport with the state rule for minor modifications.
1-39	U.S. Steel	It is inappropriate to apply Class 3C and 4A water quality standards to Admiral Lake and portions of the Sand River where no use exists (SW007). U. S. Steel requests that all Class 3C and 4A water quality standards be removed for compliance monitoring points on the Sand River and Admiral Lake (SW007); or, alternatively, language is provided in the permit to modify these limits if a UAA is approved by MPCA without opening the permit to a major modification. U. S. Steel requests that the Class 3C and 4A limits be modified in accordance with the Site Specific Standard Request that USS submitted in 2015.	The Class 3C and 4A standards currently apply to the waters identified. See Minn. R. 7050.0430. Unless or until those standards are modified or the uses removed, the MPCA is obligated to apply the standards regardless of whether the uses exist. MPCA is in the process of addressing the request for a site-specific standard and the petition for a Use Attainability Analysis. The permit does not require interim limits at these locations because there is no treatment means in place at this time. The compliance schedule requires the permittee to estimate when the applicable limits can be met based on the treatment methods they will implement. NPDES and SDS permits can only be modified by following the procedures in state rule. See Minn. R. 7001.0170, 7001.0190. Federal regulation defines the categories of major modifications. Consistent with the federal regulation, state rule allows MPCA to make a minor modification when it "will not result in allowing an actual or potential increase in the emission or discharge of a pollutant into the environment, or that will not result in a reduction of the agency's ability to monitor the permittee's compliance with applicable statutes and rules." Minn. R. 7001.0190 subp. 3(C). Any change to a limit that allows an actual or potential increase in the discharge of a pollutant would not comport with the state rule for minor modifications.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-40	U.S. Steel	The WET requirement for SD001 is unnecessary and excessive. Remove the SD001 WET requirements or at a minimum reduce the frequency to once per year throughout the permit term. Remove the SW005 WET testing requirements and remove the requirement that WET testing needs to be performed on the next active downstream monitoring station if there is no discharge from SD001. As discussed above, U. S. Steel anticipates the WET testing requirements will be removed if SD001 is eliminated.	See Item M in the "Categorical Responses to Comments". Due to recent work performed by U.S. Steel in support of its requests for site specific standards and use changes, the MPCA has eliminated the requirement for WET testing at SW005, and reduced the frequency of testing at SD001 to annually.
1-41	U.S. Steel	Interim effluent limits are not required and are not appropriate where a technology is not present. U. S. Steel requests all interim limits contained in the permit as well as conditions related to calculation of interim limits after 1 year of sampling be removed and replaced with interim progress reports during the course of the compliance schedule.	See Response to Comment 1-18g. As requested, the final permit does not include interim limits. The MPCA acknowledges that it is not feasible to install interim treatment at the facility in the 18 month window prior to seepage collection, and the long-term treatment provides the best option for achieving compliance with water quality standards.
1-42	U.S. Steel	Proposed compliance schedule is arbitrary and capricious. The draft permit contains a wide variety of compliance points, limits and monitoring requirements that are outside the bounds of a proper compliance schedule. For example, given the ongoing activities and the pending tasks to gather information on local hydrogeology, it is not appropriate for the MPCA to include in the permit a compliance schedule related to deep seepage. Similarly the MPCA cannot yet define the sulfate concentrations necessary to comply with water quality standards applicable at the U.S. Steel property boundary ... Significant work is already ongoing pursuant to the 2014 Permit to Mine amendment administered by the DNR that is sufficient to satisfy the MPCA's information gathering needs regarding deep seepage. As that work proceeds the MPCA will be able to develop a record supporting a compliance goal upon which a compliance schedule can be based. In addition, the MPCA cannot support a compliance schedule directed towards reaching targets of sulfate concentrations in the tailings basin until it has information showing that those concentrations have been calculated and show that they are supported by a conclusion that they are necessary to achieve compliance with a specific state standard. U. S. Steel requests that the MPCA review and revise compliance schedules in the draft permit to more properly reflect the purpose of compliance schedules in Minnesota rules	See Item F in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-43	U.S. Steel	Proposed Compliance Schedule related to Deep Seepage – Investigation Work Plan is arbitrary, over-reaching, overly burdensome, and not necessary. U. S. Steel has been working with the MN DNR over the past 3 years to advance the understanding of the transport and fate of sulfate associated with the Minntac tailings basin through the DNR's MWRAP research program....The requirement of a separate investigation work plan which duplicates a permit condition from another regulatory agency is redundant and a waste of limited resources....Given the complexities of the Minntac tailings basin, the requirement that a conceptual model be developed that will predict mass of constituents emanating from the tailings basin and travel times to within plus or minus 10% within the proposed timeframes is not feasible. U. S. Steel requests that the Deep Seepage – Investigation Work Plan be removed from the Compliance Schedule, in lieu of work already required by Special Condition 6 of the 2014 Permit to Mine Amendment administered by the MN DNR.	Regarding the authority and basis for the schedule, see Item F in the "Categorical Responses to Comments" and Response to Comment 1-18g. As described in those responses, the MPCA is requiring the schedule (including the investigation portion) to improve the precision of estimates of water leaving the basin. This schedule is necessary to ensure protection of groundwater and surface water in the area of the basin. The MPCA considered the MN DNR requirements and acknowledges the schedule will overlap with Permit to Mine requirements. However, less work will be required to fulfill both permits, making it more feasible to fulfill the requirements. The comment questions the feasibility of the conceptual model, but does not provide (or indicate that the commenter could provide) specific information to demonstrate the infeasibility. The permittee was required to begin investigations into sulfate and groundwater movement more than 30 years ago under its existing NPDES permit. The Permit to Mine has required similar investigations. This permit allows the permittee to continue those investigations before completing a conceptual model. The MPCA has revised the schedule to take into consideration the comments by an engineering/consulting firm, Short, Elliot, and Hendrickson. As a result, the MPCA concludes the schedule is feasible.
1-44	U.S. Steel	Required sampling and flow measurements for the calculation of mass flux that 'could be used to determine where contaminant mass may be entering the river system' is not appropriate and is unnecessary. U. S. Steel requests that the requirements for a system mass balance that accounts for the transport or transformation of parameters of concern and travel times be removed from the permit. Alternatively, allow U. S. Steel to determine site investigation needs during execution of the compliance schedule.	See Response to Comment 1-30 regarding the MPCA's authority to require monitoring. The mass calculations are necessary to determine the effectiveness of the treatment at the facility and the potential effects on downstream waters.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-45	U.S. Steel	Chapter 1, Background Section 1.1.a discusses interim and final limits on the tailings basin pool water. As previously stated, U. S. Steel disagrees with compliance limits being placed on the tailings basin clear pool. A compliance schedule should be utilized for a documented non-compliance, not for the agency to arbitrarily add conditions however they see fit. Since the tailings basin is not a water of the state, and compliance limits are placed on groundwater wells at the property boundary, this section is unnecessary. U. S. Steel requests that section 1.1.a be deleted.	See Response to Comment 1-18g and Items E & F. The comment raises a legal argument regarding the applicability of compliance schedules; the MPCA disagrees with the interpretation of law. Schedules of compliance are not used exclusively in enforcement actions. A compliance schedule is appropriate when a permittee cannot meet a condition in a permit upon the condition taking effect and needs time to achieve compliance with the condition. See Minn. R. 7001.0150 subp. 2(A). The MPCA notes that U.S. Steel is currently subject to a Schedule of Compliance enforcement document, which was amended based on reported exceedance of water quality standards.
1-46	U.S. Steel	Chapter 1, Background Section 1.3 requires the permittee to specify by month 37 final compliance dates for all pollutants. It is difficult to even understand what this section is discussing as it does not list compliance locations or parameters that are subject to the requirement. Although it is a background section it lacks required specificity for a permittee or the general public to even understand what is being requested, and therefore it serves no purpose. U. S. Steel requests that section 1.3 be deleted.	See items F & G. In addition, MPCA has revised the permit language in question to improve clarity.
1-47	U.S. Steel	Chapter 1, Background Section 1.5 requires installation of Dark River Seep Collection and Return no later than December 31, 2017. MPCA is well aware that several permits are required by multiple regulatory agencies prior to U. S. Steel having all of the necessary authorizations to construct the Dark River Seep Collection and Return project. U. S. Steel has no control over when permits are ultimately issued as it is a function of both agency resources and requirements, and public input. The permit condition as written ignores that and seems to implicate that the decision to construct is solely U. S. Steel's. U. S. Steel will not construct without having all regulatory authorizations received as it is unlawful to do otherwise. U. S. Steel requests the following changes to section 1.5: "...and for all such seepage along the west and northwest dam boundary, no later than 8 consecutive construction season months, during one or more construction season(s), after receipt of all necessary regulatory approvals." Also, the required installation date should be from permit effective date, not a specific date as stated in the permit.	MPCA is aware that permit requests are still pending and has adjusted the deadline to allow a reasonable amount of time for those requests. The MPCA has revised the language in this section to provide 18 months from permit issuance to install the Dark River Seep Collection & Return System. MPCA disagrees with the statement that U.S. Steel has no control over permit issuance; delays in paying fees or responding to requests for information by the permitting authority will delay the permitting process, and believes that has delayed this permitting. The MPCA notes that the 2011 SOC required installation of the Dark River SCRS. The permittee has had nearly seven years since agreeing to the installation to obtain permits and approvals. MPCA recognizes that U.S. Steel cannot construct the Dark River SCRS before issuance of necessary permits. If permits cannot be obtained in the time allotted, the permittee can request a permit modification to extend the deadline.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-48	U.S. Steel	Chapter 1, 1.6-1.11 of the permit requires a deep seepage investigation work plan. Unless or until MPCA can clearly delineate the regulatory purpose behind the request for an Investigation Work Plan, including specific compliance locations and parameters for which non-compliance exists, Sections 1.6-1.11 should be deleted. If MPCA chooses to clarify the locations and parameters for which non-compliance exists and the Plan would be required for, more time is needed to complete the requirements. Due to section 2.1, the plan should be due at a minimum of 6 months after issuance (section 1.6).	Regarding the MPCA's authority to impose a schedule of compliance, see Response to Comment 1-18d. The MPCA has revised the date for submittal of the deep seepage investigation work plan to 180 days after issuance as requested in the comment. The MPCA notes that the permittee has reported exceedances of groundwater standards at two locations (GW012 and GW013) along the facility boundary. The facility is also subject to an enforcement Schedule of Compliance that was intended to reduce pollutant concentrations in the tailings basin. As noted in Response to Comment 1-10, groundwater standards apply to all groundwater, not merely at property boundaries.
1-49	U.S. Steel	Chapter 1, section 1.12-1.14 requires a Basin Treatment Methods Study Plan. ... Although compliance points are located outside the basin this section does not reference those and instead focuses on the clear pool which does not indicate compliance at all compliance points.... U. S. Steel is requesting to delete sections 1.12-1.14 as they do not relate to compliance at the compliance points.	The comment questions the basis for imposing the compliance schedule component. The MPCA developed the compliance schedule to achieve compliance with water quality standards in groundwater and surface water surrounding the basin. To achieve compliance with all standards, the permit requires study of treatment options of the source of the pollutants -- the tailings basin clear pool. U.S. Steel has itself proposed to treat the water going into the basin and has never proposed any type of treatment of water before it enters groundwater. The comment does not present any potential alternative treatment approach. The MPCA expects that achieving reductions in the pool will result in reductions in water quality standards in surface and ground waters. The MPCA has revised the permit language to specify that the 357 mg/L is a final limit.
1-50	U.S. Steel	Chapter 1, SDS Schedule for Deep Seepage – Final Compliance Plan, Final Plans and Specs and System Implementation or Construction (1.15-1.21). Unless or until MPCA can clearly delineate the compliance points required to be evaluated, these sections should be deleted. If MPCA chooses to clarify the locations and parameters for which non-compliance exists and the Plan would be required for, more time is needed to complete the requirements. All references to closure should be deleted. Section 1.16a should be deleted as the tailings basin concentration fluctuates and is moot related to compliance points.	See Response to Comment 1-49. The final plans and specifications for a treatment system are a typical requirement before construction to give the MPCA assurance that the system will be constructed to meet permit limits.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-51	U.S. Steel	Appropriate time to complete required wetland and other permitting has not been incorporated into the compliance schedule. U. S. Steel requests that language be included in the permit to allow time for wetland permitting and application for and receipt of all associated regulatory approvals/authorizations required for implementation of monitoring installations or control equipment in applicable areas outside of the tailings basin perimeter dike. The permit should therefore be revised as follows: Chapter 1. Compliance Schedule 2.4. If any of the submitted Plan(s) described herein propose actions requiring permits and/or approvals, the Permittee shall make reasonable efforts to submit complete and accurate applications in the shortest reasonable period of time and comply completely and accurately with any requests for additional information in the timeframes specified in the requests. If the permittee has not made reasonable efforts, delays in permit issuance due to incomplete or inaccurate applications will not excuse failure to meet permit deadlines. Delays in issuance of permits necessary to complete requirements of the permit that are beyond the control of the permittee shall excuse failure to meet permit deadlines that are impacted by delays in permit issuance. The permittee shall cooperate with the MPCA and other relevant government agencies to ensure that the government entity responsible for permit issuance has received all information necessary to act on permit applications.	The final permit allows time (270 days) to install monitoring wells at new locations and reduces the number of installations required. If the permittee has good cause to modify the permit and delay data collection, the permit may be modified under Minn. R. 7001.0170. Good cause can include inability to obtain permits, provided that the permittee has submitted timely and complete permit applications to the relevant agencies.
1-52	U.S. Steel	Permit requirements to meet with MPCA before certain milestones is not realistic within the timeframes proposed in the permit. There is not enough time allocated to perform the studies and proposals as well as meet with the agency in the time frames as proposed in the permit. U. S. Steel requests that additional time be incorporated into the permit regarding meetings with the MPCA.	The final permit has adjusted timeframes to account for additional time at various steps. One meeting with MPCA staff does not reasonably prevent progress on a 12-month plan.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-53	U.S. Steel	Separate requirements under the Dark River Seepage Collection and Return System (SCRS) are potentially in conflict: The requirements contained in sections 1.22, 1.24 and 1.26 of the draft permit are potentially in conflict, depending upon the date of final permit reissuance, MPCA review and approval, and regulatory authorization related to wetlands. U. S. Steel agrees that an 8 consecutive construction month schedule for completion and start-up of the SCRS is feasible. However, it is possible that permit issuance, MPCA review and approval, and regulatory authorization for project-related wetlands may not occur early enough to for the SCRS to be constructed and operational by December 31, 2017.	The requirement to have the SCRS constructed and operational by December 31, 2017, has been removed and replaced with the language identified in Response to Comment 1-47.
1-54	U.S. Steel	It is unknown to what 'subheading 6' refers to. U. S. Steel requests that MPCA provide clarification to what is meant by the term 'subheading 6' in the first sentence of Section 1.2: "If concentrations of any secondary parameters identified in subheading 6 in the proposed source water..."	Subheading 6 has been corrected to refer to subheading f.
1-55	U.S. Steel	Requirement to include an updated 5-year Operating Plan for the tailings basin for application of future permit reissuance is excessive, arbitrary and beyond the authority of the MPCA. Yearly operating plans for the tailings basin are submitted to the MN DNR as part of the Annual Report requirements of the Permit to Mine. Requiring a five-year projection of future tailings basin operations is redundant and beyond the MPCA's regulatory authority.	The MPCA has authority to require permittees to properly operate the facility, and to submit information regarding the operation of the facility covered by the permit. Minn. R. 7001.0150, subp. 3(F), (H). This permit condition provides the agency assurance that the permittee will be able to properly operate the facility for the term of the permit, including issues such as adequate operator staffing and training.
1-56	U.S. Steel	The Dike Seepage Survey and Survey Report is unduly burdensome and unnecessary. U. S. Steel is required by the Minnesota Department of Natural Resources (DNR) to complete an annual Tailings Basin Dike Seepage Survey and Report under the Dam Safety program. Requirements to complete a second survey which contains the same information would be unduly burdensome and unnecessary.	This permit requirement would not necessitate that U.S. Steel complete a second survey, but would require the information from the survey be provided annually to the MPCA. This is not unduly burdensome; the comment states that the same information is requested. The MPCA requested recent seepage survey information from Minnesota DNR, but was informed that U.S. Steel had not submitted a seepage survey report since 1991.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-57	U.S. Steel	Mercury Minimization Plan requirement is inappropriate, unduly burdensome, and unnecessary. The requirement that Minntac complete and submit a Mercury Minimization plan is redundant and should be removed from this draft. As a result of the Mercury TMDL process, in September 2016 MPCA finalized the Mercury Air Emission Reduction and Reporting Requirements rule. This rule is applicable to taconite facilities, including Minntac, and requires that facilities complete and submit a plan to reduce mercury emissions. To require another plan to reduce mercury is redundant. U. S. Steel requests that Chapter 6 (page 32) be removed from the Draft Permit. A copy of the required plan for the Mercury Air Emission Reduction and Reporting Requirements rule can be made available to the applicable MPCA group upon request.	The Mercury Air Emissions Reduction and Reporting Requirements rule addresses air emissions. The MMP requirement in the draft NPDES/SDS permit is to address mercury in the facility's wastewater effluent. The NPDES/SDS permit requirement addresses a separate wastestream (and is a separate condition) from compliance with the air emissions rule. Therefore, the condition is not redundant.
1-58	U.S. Steel	Minntac already maintains a Stormwater Pollution Prevention Plan (SWPPP) and bimonthly (every other month) inspection schedule which sufficiently protects surface and groundwater quality from stormwater pollution. U. S. Steel requests that Chapter 8, Section 5.1 be revised to: "The Permittee must develop and implement an inspection schedule that includes a minimum of one bimonthly (every other month) facility inspection during non-frozen conditions (March through October)."	The permit incorporates requirements of Minnesota's Industrial Stormwater General Permit. The requirements for a facility to have coverage for its stormwater discharge under the Sector G category under the umbrella of its individual NPDES/SDS permit stipulates monthly inspections. The plan to include the stormwater discharge from stockpiles at the southwest corner of the basin, and the associated benchmark monitoring, necessitates modification of the SWPPP as well.
1-59	U.S. Steel	The Dark River Seepage Collection and Return System is designed to collect all surface and shallow groundwater seepage that formerly reported to SD001. In addition, return flow from the Dark River SCRS will be discharged to a swale that carries fine tailings decant flow back to the clear pool reservoirs located on the north and east side of the tailings basin. U. S. Steel requests that Chapter 10, Section 3.4 (page 41 of draft permit) be revised to read: "Upon Completion of construction of the Dark River Seepage Collection and Return System and commencement of its operation, all 'surface and shallow groundwater seepage' formerly reporting to SD001 will be captured and pumped back into the tailings basin, effectively eliminating the discharge through the currently permitted outfall."	The proposed change from "water" to "surface and shallow groundwater seepage" has been made.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-60	U.S. Steel	The Final Limits for Class 3 and Class 4A Parameters is unclear and poorly written. A monitoring schedule is outlined defining when violations of permit conditions related to final limits for Class 3 and Class 4 constituents may occur at surface water monitoring stations. However, the scheme to determine compliance is convoluted and there is no definitive indication of when the final period of compliance applies. U. S. Steel requests that a more clear explanation be provided of what constitutes compliance with respect to the Class 3 and Class 4A water quality standards and the applicable surface water monitoring stations.	The MPCA has revised the permit to exclude limits for the Class 3 and 4A parameters in surface water. See Response to Comments 1-38 and 1-39.
1-61	U.S. Steel	Sampling required at mid-stream, mid-depth may not be practical or feasible from a safety perspective, and reporting of location, date, time and results for each sample on a supplemental DMR form is overly burdensome, unnecessary, arbitrary and capricious. Chapter 11, Section 4.8 specifies that: "Samples shall be taken at mid-stream, mid-depth. Record location, date, time and results for each sample on the supplemental Discharge Monitoring Report form." Collecting samples from mid-stream, mid-depth is not feasible at all monitoring locations and at all times, especially with respect to certain required sampling procedures. Certain procedures require that samples be collected directly into the bottle without intermediate transfer, which would be impossible at some monitoring locations. Recording the location, date, time and results for each sample on a supplemental DMR serves no useful purpose and is a waste of limited resources. All backup monitoring information kept on file and is readily available upon request. U. S. Steel requests that Chapter 11, Section 4.8 be revised to: "Samples shall be taken at mid-stream, mid-depth as much as possible considering the sampling technique required and the safety of the sampling personnel." U. S. Steel further requests that the requirement to record the location, date, time and results of each sample on a supplemental DMR be eliminated.	The MPCA considered the comment and revised the permit, removing the referenced language. The language related to sampling at mid-stream, mid-depth, and recording location, date, time on results on a supplemental DMR has been removed from the permit.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
1-62	U.S. Steel	The requirement to submit DMR sample values and/or Operational Spreadsheets or DMR supplemental form is overly burdensome, unnecessary, arbitrary and capricious. There is no regulatory basis for the requirement to complete anything other than a monthly discharge monitoring report. Language contained within Chapter 13, Sections 1.21 and 1.22 indicate that additional forms may include DMR Sample Values and/or Operational Spreadsheets or Supplemental Forms, similar to language found in the MPCA Wastewater Permit User's Manual. However, requiring completion of additional reporting forms is overly burdensome and is a waste of limited resources. Additionally, electronic reporting is not facilitated by submittal of Sample Values or Operational Spreadsheets. All final DMR data must be rechecked following automatic download of supplemental data to ensure accurate transfer, which requires additional time. U. S. Steel requests that all reference to DMR Sample Values and/or Operational Spreadsheets or DMR Supplemental Forms be eliminated from the draft permit.	These requirements are necessary to ensure that data are properly entered in the MPCA's database in a way that is consistent across the Agency and that promotes future use of the data. All facilities with an NPDES/SDS permit have this requirement. The most current language for this section will be included in any updated versions of a final permit. To the extent the comment disputes MPCA's legal authority to require monitoring and reporting, see response to comment 1-30.
1-63	U.S. Steel	The requirements in Chapter 13, section 1.35 are overly burdensome, arbitrary and capricious. Chapter 13, Section 1.34 and 1.35 discuss requirements related to "releases," but the terms is not defined. The requirement in Section 1.35 that samples be collected at least, but not limited to, two time per week for as long as the release continues is overly burdensome and no legal basis is provided. U. S. Steel requests that the requirement "Samples shall be collected..." from 'releases' be qualified as it relates specifically to wastewater releases.	Although "release" is not defined, the context provides that it includes "overflows, discharges, spills, or other releases of wastewater or materials to the environment." Permit section 5.36.194. Sampling of releases is standard practice in NPDES permits and is necessary to determine the degree of pollution to the environment. To the extent the comment disputes MPCA's legal authority to require monitoring, see response to comment 1-30.
1-64	U.S. Steel	Facility closure requirements in Chapter 13, section 1.51 are over reaching and redundant. Facility closure requirements are a DNR responsibility, not requirements of a NPDES or SDS permit. The fact that MPCA includes closure requirements is an overreach of authority and is redundant to DNR's permit to mine. There is no legal requirement to notify MPCA within 180 days of significant reduction or cessation of operations. Nor does MPCA have regulatory authority to approve a closure plan or financial assurance. U. S. Steel requests section 1.51 on page 50 of the Draft Permit be removed in its entirety.	State law assigns closure and postclosure care of facilities to the facility owner. The MPCA may take actions required for closure or postclosure care if the owner fails to do so, but the owner or operator is liable for the costs incurred. Minn. Stat. § 116.07 subd. 4f.
2-1	Minnesota Center for Environmental Advocacy	The Minnesota Pollution Control Agency (MPCA) must regulate point source discharges to surface waters through hydrologically-connected groundwater according to water quality standards promulgated and approved pursuant to the Clean Water Act (CWA).	See Item A in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
2-2	Minnesota Center for Environmental Advocacy	Moreover, the draft NPDES permit MN0057207 (Draft Permit) and its accompanying fact sheet (Fact Sheet) lack clarity on whether unlimited surface seeps are allowed.	See Item I in the "Categorical Responses to Comments". The MPCA has revised the language in the permit to address this comment.
2-3	Minnesota Center for Environmental Advocacy	MPCA has not demonstrated that the limits will protect uses in downstream and downgradient waters, for many reasons articulated herein. MPCA cannot await the collection of additional monitoring data over the next decade or more before imposing more stringent limits necessary to protect all waters affected by numerous pollutants in the facility's effluent that are known to be harming waters of the state and of the U.S.	The installation of the Dark River Seepage Collection & Return System will eliminate surface water discharges on the west side of the basin. The Sand River SCRS has removed surface discharges from the east side of the basin. The sulfate reductions required in the basin are calculated to achieve compliance with groundwater standards. If the final basin concentration needs to be adjusted based on information not presently available, the permit can be modified in the future.
2-4	Minnesota Center for Environmental Advocacy	Wet waste from these processes, called "tailings," is pumped into an 8,000-acre holding basin (the tailings basin), where it is held in place by dikes approximately 900 feet tall	The perimeter dam of the tailings basin is roughly 60 feet tall, while the interior dikes are projected to be roughly 150 feet above the original ground surface.
2-5	Minnesota Center for Environmental Advocacy	This wastewater makes its way into surface waters by seeping through or under dike walls, and by overtopping the surrounding dams.	The MPCA acknowledges there is seepage through and under the perimeter dam. This is part of the basis for the requirement to install the Dark River SCRS. MPCA is unaware of basin water ever overtopping the perimeter dam and the MCEA comments did not provide any evidence of this. The DNR dam safety permit requires that significant freeboard be maintained to prevent overtopping of the dam during a 6 hour maximum probable precipitation event.
2-6	Minnesota Center for Environmental Advocacy	THE U.S. STEEL MINNTAC TAILINGS BASIN DISCHARGES ARE REGULATED BY THE CWA BECAUSE THE FACILITY DISCHARGES TO SURFACE WATER VIA HYDROLOGICALLY CONNECTED GROUNDWATER. A. The CWA Applies To Hydrologically-Connected Groundwater	See Item A in the "Categorical Responses to Comments"
2-7	Minnesota Center for Environmental Advocacy	The Minntac tailings basin is, itself, a "container" and therefore a point source.	Container is not a defined term under the CWA. However, under 40 CFR 260.10 (definitions applicable to solid wastes) it is defined as follows: "Container means any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled." The Merriam-Webster dictionary defines container as "a receptacle (such as a box or jar) for holding goods" or "a portable compartment in which freight is placed (as on a train or ship) for convenience of movement." The tailings basin is not like a box or jar, and is not a portable compartment. The MPCA concludes that the basin does not meet the definition of a container.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
2-8	Minnesota Center for Environmental Advocacy	The Minntac tailings basin also discharges pollutants through smaller point sources, such as conduits and discrete fissures, which leak to both navigable waters and to groundwater with a direct hydrologic connection to navigable waters protected by the CWA. In order to comply with the law, MPCA must include effluent limitations for all of Minntac's point source discharges that impact surface waters.	See Items A and H in the "Categorical Responses to Comments". The MPCA is not aware of the discharge of pollutants from the Minntac tailings basin via either a conduit or discrete fissure. The MCEA comments did not provide any evidence of this. Seeps from the basin are the result of the groundwater table being higher than the ground elevation at that point and do not necessarily indicate a conduit or fissure.
2-9	Minnesota Center for Environmental Advocacy	Under the CWA there is no justification for MPCA 's artificial distinction between the "hydrologic definition" and the "NPDES - CWA definition" of discharge. Fact Sheet at 7. Indeed, the CWA, federal case law, and the EPA's own interpretation of this law requires the MPCA to treat discharges to surface water via hydrologically-connected groundwater as regulated under the CWA, and subject to NPDES permit controls. As a result, the entire premise of not applying CWA standards to groundwater discharge from Minntac is arbitrary and capricious and contrary to federal law. MPCA must re-write this permit in order to apply federal pollution standards that include effluent limits necessary to protect surface waters from Minntac's discharge of pollutants via hydrologically-connected groundwater.	See Item A in the "Categorical Responses to Comments"
2-10	Minnesota Center for Environmental Advocacy	MPCA must rewrite the final NPDES permit for Minntac to clearly acknowledge the facts that demonstrate that discharges to groundwater are directly hydrologically connected to surface waters...MCEA submits that a polluter cannot escape the provisions of the CWA by discharging its pollutants into the ground adjacent to a lake or river, rather than into the lake or river itself. If the path of pollution from the source into the surface water is clear, that discharge is governed by the CWA.	See Item A in the "Categorical Responses to Comments". As noted in Response to Comments 2-7 and 2-8, the MPCA does not agree that the tailings basin is a container, and is not aware of any conduits or discrete fissures at the site.
2-11	Minnesota Center for Environmental Advocacy	Treating a portion of a discharge as subject to federal requirements while other discharge of the same water, from the same point source, polluting the same water is only offers polluters a method to circumvent the CWA. Under MPCA's interpretation, a mining company could simply discharge polluted water into the ground rather than directly to surface water; regardless of the impact on nearby surface water.	See Item A in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
2-12	Minnesota Center for Environmental Advocacy	Furthermore, while MPCA touts the SCRS as a "zero discharge" solution to Minntac's NPDES problem, the lakes and rivers might actually be better off without it, because it acts as a disincentive to install control or treatment technology that would more fully address the problem. In the absence of the SCRS, USS would presumably be required to treat at least its surface water discharge, which would improve the quality of the river and downstream waters even if the groundwater discharges were not subject to federal requirements. Treating groundwater and surface discharges differently in this case thus may be impacting the ability of CWA requirements to work as intended even for surface discharge.	See Item C in the "Categorical Responses to Comments". The MPCA notes that the final permit does require the permittee to develop and implement treatment for tailings basin water, which will benefit groundwater and surface water.
2-13	Minnesota Center for Environmental Advocacy	MPCA's stated opinion in the Fact Sheet is "To be consistent with this legislation [2015 Minn. Laws 1st Sp. Sess. Ch. 4, Art. 4, Sec. 136], the draft permit contains no sulfate limits for wild rice and does not require expenditures related to wild rice sulfate-limits." Fact Sheet at 33. This is illegal under the CWA and its federal regulations. MPCA must follow its EPA-approved water quality standards as part of its CWA delegation...Therefore MPCA must determine whether effluent limits are necessary to ensure the Minntac discharge meets the applicable 10 mg/l sulfate standard in receiving waters.	See Item J in the "Categorical Responses to Comments"
2-14	Minnesota Center for Environmental Advocacy	While the State of Minnesota is currently conducting research to determine whether the sulfate standard for wild rice may be changed, existing uses must still be protected in the interim. In addition to the 10 mg/l numeric sulfate standard, a narrative standard applies as well. As with numeric standards, narrative water quality standards have been approved by the EPA, and thus are enforceable under the CWA as a matter of federal law.	See Item J in the "Categorical Responses to Comments". The MPCA does not dispute that narrative water quality standards are enforceable standards.
2-15	Minnesota Center for Environmental Advocacy	The narrative standard provides: For all Class 2 waters, the aquatic habitat, which includes the waters of the state and stream bed, shall not be degraded in any material manner,... the biota normally present shall not be prevented or hindered by the discharge of any sewage, industrial waste, or other wastes to the waters... "Fish and other biota" and "lower aquatic biota" include emergent vegetation. Minn. R. § 7050.0150, subp. 4(f)... It is clear that the propagation of wild rice, which is normally present on the Sand Lakes, is being prevented or hindered by the discharge of waste from the Minntac tailings basin. MPCA must set WQBELs in the permit that will bring sulfate levels in the Sand Lakes down to a level that will not adversely affect wild rice.	See Item J in the "Categorical Responses to Comments". The MPCA proposed to list Sandy Lake and Little Sandy Lake as wild rice waters in the rulemaking process. The MPCA has not determined the protective sulfate concentration in the lakes, or to what extent subsurface transport of pollutants to the lakes may be impacting sulfide concentrations in lake sediments. Calculating WQBELs requires assessment, measurement, and monitoring of surface discharges. MPCA is not aware of any measurable surface discharge in the area of the Twin Lakes.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
2-16	Minnesota Center for Environmental Advocacy	The Draft Permit and Fact Sheet both allude to the fact that there are additional surface seeps around the tailings basin perimeter, and that these seeps will need to be studied further under permit compliance. However, neither the Fact Sheet nor the Draft Permit include a map or schematic that shows the surface area where seepage is deemed to be a point source subject to NPDES requirements. Nor does either document identify the locations of all known seeps and differentiate between those that are collected and those that are not. We are thus left to wonder whether any enforcement is intended or would be available if surface seeps close to the dam are not collected...All of these seeps are point source discharges under the CWA, yet the permit provides no information on their location, monitoring, or control. MPCA must disclose this information along with a final permit that sets monitoring requirements and effluent and flow limits at all known seeps.	See Item I in the "Categorical Responses to Comments". As noted in Response to Comment 1-56, the MPCA requested seepage surveys from DNR and was informed that U.S. Steel had not submitted any since 1991. Subsequent to this request, U.S. Steel did complete a seepage survey in October of 2017, and submitted the results to DNR in February, 2018 in a report titled "2017 Tailings Basin Status Report". Based on this report, a discharge monitoring station (SD 006) has been added to the permit to monitor seepage to wetlands along the north-central portion of the basin dam. In addition, the Dark River Seepage Collection & Return System is required by the permit to eliminate surface water discharges from the west side of the basin. Any discovered seeps flowing to areas not listed as receiving waters must be eliminated unless the permit is modified to allow the discharge. In the absence of such allowance, the seeps are an unauthorized discharge.
2-17	Minnesota Center for Environmental Advocacy	As MPCA points out in its Fact Sheet, the agency has historically and consistently treated two of the surface seeps immediately beyond the dam as NPDES discharges. Other surface seeps seem not to have been treated as NPDES discharges. There seems to be no coherent criteria that MPCA applies to determine what discharge water falls under the purview of the CWA. MPCA 's apparent justification for treating some of this water as a NPDES discharge is: NPDES permitting guidelines can be applied because flow from the large seeps is often observable, and with installation of a berm and outlet weir the flow can be measured, similar to flow from a ditch or channel. This allows quantification of flow volume and pollutant load, such that the reasonable potential to cause or contribute to exceedance of a water quality standard can be evaluated and, if necessary, effluent limits can be determined and applied.(Fact Sheet at 7) Again, nothing in the CWA or in federal regulations indicates that the definition of a point source subject to CWA requirements rests on an easy means to measure flow volume and pollutant load; discharge of pollutants from a point source to surface waters is prohibited without a permit regardless of the difficulty of measurement or quantification, and regardless of whether it has the reasonable potential to cause or contribute to exceedances of water quality standards.	See Items A and I in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
2-18	Minnesota Center for Environmental Advocacy	The permit is ambiguous on this central issue. According to the Fact Sheet, "one requirement of this permit is to intercept/eliminate [NPDES] discharges," "the remedy for the impacts to the Dark River from this seepage is to eliminate the discharge (NPDES)," and "collection of surface seepage from the west side of the Minntac tailings basin for return to the recirculating process water system would eliminate the remaining surface discharge (NPDES) to waters of the United States." Fact Sheet at 9, 37. However, the Draft Permit is unclear as to whether continuing surface seepage is actually prohibited. Final limits are included for SD001 (following implementation of the West SCRS), with flow listed as "monitor only." The limit for sulfate is 1000 mg/L and manganese is "monitor only;" neither of these is sufficient as a WQBEL to protect the downstream use as a trout stream, particularly if there is no limit on flow. MCEA is concerned that if the SCRS is not built or does not operate as planned, or is discontinued due to unsafe water levels, reduced flow in the Dark River, or water management problems in the tailings basin, discharge will continue to be allowed under this permit.	See Item I in the "Categorical Responses to Comments" and Response to Comment 2-16. Regarding comments on SD001 discharge limits, see Response to Comment 1-25. The MPCA determined that before completion of the Dark River SCRS, there is no feasible treatment method.
2-19	Minnesota Center for Environmental Advocacy	Chapter 5, paragraph 1 of the Draft Permit requires annual surveys for seeps that are not being collected. Although we agree with a monitoring requirement, the permit should clarify that this provision does not indicate that such seeps are allowed or legal. They are violations of the CWA. If MPCA instead intends to eliminate all of these seeps with seepage control and return systems, the permit should state so more clearly. As it is written now it seems to contemplate the continuation of unpermitted surface discharges, albeit studied by the permittee every October.	See See Item I in the "Categorical Responses to Comments" and Response to Comment 2-16.
2-20	Minnesota Center for Environmental Advocacy	The Draft Permit does not include limits necessary to prevent the discharge of pollution via surface seeps from causing or contributing to a violation of water quality standards...MPCA must impose effluent limitations necessary to achieve water quality standards in all segments of the Dark River and Timber Creek.	The permit includes a compliance schedule that requires the installation of a seepage collection and return system (SCRS) to capture surface seepage impacting Timber Creek and the Dark River. The MPCA is not imposing discharge limits at these seeps, since there is no mechanism to control the nature or amount of seepage until the SCRS is installed. After installation of the SCRS, effluent limits are unnecessary and are not appropriate, as there will be no authorized discharge. Impacts to Timber Creek or the Dark River from groundwater will be addressed under the SDS compliance schedule.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
2-21a	Minnesota Center for Environmental Advocacy	MPCA has failed to assess the need for and impose limits necessary to protect Timber Creek...While MPCA has indicated that "seeps on the southwest corner of the basin appear in aerial photo to be tributary" to Timber Creek no data have been provided about the flow or pollutant concentrations of this Creek. MPCA must assess the need for WQBELs to protect Timber Creek from the discharge of pollutants from seeps in the Minntac Tailings Basin and 'impose necessary WQBELs in the Minntac NPDES permit.	The basis and method of calculating reasonable potential is a policy issue within the MPCA's discretion. The method used in this case was consistent with U.S. EPA's guidance. The MPCA does not have, and is not aware of any data on pollutant concentrations or flow at the point referenced in the comment. Flow is necessary to determine an appropriate limit. MPCA has added a stormwater monitoring station, SD005, to the permit to determine is this is having an impact on Timber Creek. The remaining seepage in this area must be collected by the proposed Dark River Seepage Collection and Return System.
2-21b	Minnesota Center for Environmental Advocacy	MPCA failed to assess the need for and impose limits necessary to protect the Class 2B Reach of the Dark River...MPCA must impose WQBELs based on available data, even when there is limited data available on the quality of the water discharged from the facility, or some uncertainty about the precise pollutant discharge levels and potential impacts of the discharge...While MPCA calculated effluent limits of 1000 mg/L sulfate and 100 umg/cm specific conductance to meet water quality standards for these parameters in the Class 2B segment of the Dark River, MPCA did not perform a reasonable potential analysis to determine whether the Minntac discharge had the reasonable potential to cause or contribute to an exceedance of water quality standards in this segment of the Dark River for any other pollutants or parameters. MPCA must use the two samples collected to assess the need for WQBELs to protect the Class 2B reach of the Dark River.	As noted in Response to Comment 1-25, the MPCA has determined that there is no feasible immediate treatment method to control concentrations of the SD001 discharge. As a result, interim limits are inappropriate and a compliance schedule is necessary. The compliance schedule in the permit will eliminate the discharge as soon as possible, obviating any need for final permit limits. A final effluent limit is not appropriate when discharge is not authorized.
2-22	Minnesota Center for Environmental Advocacy	Using these procedures to compare Minntac's projected effluent quality to the projected effluent limits necessary to meet water quality standards (see below), shows that the absent more stringent effluent limits, the Minntac discharge has the reasonable potential to exceed applicable water quality standards for several parameters. Therefore MPCA must revise the draft permit to include WQBELs for Alkalinity, Bicarbonates, Hardness, TDS, Boron, Chloride, Copper, and Selenium.	See Response to Comments 2-21a and 2-21b.
2-23	Minnesota Center for Environmental Advocacy	The Draft Permit Does Not Include Effluent Limits Necessary to Meet Water Quality Standards in the Trout Stream Reach of the Dark River	See Response to Comments 2-21a and 2-21b and items A and E.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
2-24	Minnesota Center for Environmental Advocacy	The Draft Permit Does Not Include Manganese Effluent Limits Necessary to Ensure the Minntac Discharge at SD001 Does Not Contribute to a Violation of Water Quality Standards in the Class 1B Reach of the Dark River...Further MPCA, should explain the dilution ratio it applied to determine the 'likely concentration of manganese in the Class 1 B reach of the Dark River. Here, MPCA applied a much lower dilution ratio, 0.045, to Minntac's surface discharge of manganese, than it did to all other pollutants discharged at SD001, 0.43.	Regarding interim limits at SD001, see Response to Comments 2-21a and 2-21b above. Regarding the dilution ratio, the final permit does not rely on the dilution ratio used in the draft permit and requires monitoring in the Class 1B reach of the Dark River. The permit fact sheet discusses manganese monitoring at the facility. See section titled "Iron and Manganese Monitoring."
2-25	Minnesota Center for Environmental Advocacy	The draft sulfate effluent limit proposed for SD001, 1000 mg/L, is calculated to meet water quality standards in the Class 2 reach of the Dark River, but is insufficient to ensure Minntac's discharge meets the sulfate standard applicable to the Class 1B reach of the Dark River...According to MPCA's own dilution estimates, a discharge of 1000 mg/L sulfate would result in a likely concentration of 430 mg/L sulfate in the Class 1 B reach of the Dark River, which exceeds the applicable 250 mg/L water quality standard. MPCA must impose a more stringent sulfate effluent limit applicable at SD001 that ensures the Minntac discharge meets water quality standards in the downstream Class 1B reach of the Dark River.	See Response to Comment 2-21b regarding interim limits at SD001. The permit contains a compliance schedule for the installation of the seepage collection and return system on the west side of the basin that will eliminate discharge at the SD001 location. If this does not result in the 250 mg/L sulfate standard at the Class 1B reach of the Dark River being met, this will be addressed under the permit requirement to determine and achieve a basin sulfate concentration that will meet all applicable standards in the surrounding waters of the state.
2-26	Minnesota Center for Environmental Advocacy	MPCA may not authorize Minntac to cause a violation of Class 3 and Class 4A water quality standards ten percent of the time.	The permit has been revised to remove the language allowing exceedance of the Class 3 and 4A standards ten percent of the time.
2-27	Minnesota Center for Environmental Advocacy	MPCA cannot address any other permittee applications at this time - MCEA recognizes that the permittee has applied for several modifications, such as a Use Attainability Analysis and Site Specific Standard. MPCA cannot make any such modifications in this proceeding without having sufficient public comment and proceedings on the proposals, because any such change to MPCA's Draft Permit issued for comment is not a minor modification where the agency can act without full public review. 40 C.F.R. §§ 122.62, 122.63. As a result, MCEA makes no additional comments on these applications, which were not provided for comment with this Draft Permit.	The MPCA acknowledges the public participation requirements under the CWA and state law. *See* , *e.g.* , 40 C.F.R. § 124.10; Minn. R. 7001.0110, 7001.0190. Any of the changes referenced in the comment will follow the necessary public participation procedures.
2-28	Minnesota Center for Environmental Advocacy	MPCA agrees that discharges from the tailings basin to groundwater are hydrologically connected to surface waters. "The MPCA recognizes that basin-impacted groundwater is currently reaching surface waters and having an impact on those surface waters." Draft Permit at 22.	The MPCA agrees that groundwater in the vicinity of the basin is affected by seepage from the basin itself, and that this groundwater reaches surface waters.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
2-29	Minnesota Center for Environmental Advocacy	MPCA agrees that pollution in the groundwater beneath and near the tailings basin is directly traceable to tailings basin discharge. "After more than 40 years of operation, essentially all groundwater in the surficial aquifer beneath the basin is likely to be tailings-impacted." Fact Sheet at 11.	See previous response. The MPCA has found that the only source of pollution in the vicinity of the basin is the Minntac tailings basin.
2-30	Minnesota Center for Environmental Advocacy	MPCA agrees '"the tailings basin is causing or contributing to exceedance of water quality standards in these downgradient [surface] waters." Fact Sheet at 14.	The MPCA agrees with the statements contained in the permit and fact sheet.
2-31	Minnesota Center for Environmental Advocacy	MPCA agrees that surface water quality is impacted by tailings basin discharge to groundwater. Draft Permit at 23. Similarly, MPCA recognizes this impact when it calls for the reduction of "surface water and groundwater quality impacts from the tailings basin" resulting from deep seepage. Draft Permit at 24.	The MPCA agrees with the statements contained in the permit and fact sheet.
2-32	Minnesota Center for Environmental Advocacy	MPCA agrees that "groundwater flow ... enters the Dark River as baseflow both near the basin and at unknown distances downgradient from the basin." Fact Sheet at 16.	The MPCA agrees with the statements contained in the permit and fact sheet.
2-33	Minnesota Center for Environmental Advocacy	MPCA agrees that its reference to "surface waters impacted by deep seepage," Draft Permit at 22 & Fact Sheet at 38, refers to water pollution occurring in surface waters that is traceable to Minntac's discharge through connected groundwater.	See Response to Comments 2-28 and 2-29.
2-34	Minnesota Center for Environmental Advocacy	MPCA agrees that surface waters adjacent to the Minntac basin are "downstream surface waters" and the basin's sulfate must be controlled to "protect applicable uses in downstream surface waters and in groundwater... " Draft Permit at 22.	The MPCA agrees with the statements contained in the permit and fact sheet. The surface waters adjacent to the basin are technically downgradient from the basin, not downstream.
2-35	Minnesota Center for Environmental Advocacy	MPCA agrees that waters with "applicable water quality standards" are both "downgradient and downstream of the Facility." Draft Permit at 28.	The MPCA agrees with the statements contained in the permit and fact sheet.
2-36	Minnesota Center for Environmental Advocacy	MPCA agrees that Minntac's tailings basin was constructed over the headwaters of the Dark River and Sand River, and now the headwaters commence at the tailings basin wall- fed by tailings basin groundwater discharge. "The tailings basin also straddles a north-south trending watershed divide and has buried the headwaters of the major streams in those watersheds, the Dark River to the west and the Sand River to the east. The headwaters for both streams are now adjacent to the basin dam." Fact Sheet at 11.	The MPCA agrees with the statements contained in the permit and fact sheet.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
2-37	Minnesota Center for Environmental Advocacy	MPCA agrees that it is clear that elevated sulfate concentrations in Little Sandy Lake and Sandy Lake (Twin Lakes) are caused by sulfate inflows from the Minntac tailings basin. "There has been a long-standing issue with increasing concentrations of pollutants in the tailings basin (notably sulfate, specific conductance, and hardness), and the impact this has had on groundwater and surface water." Draft Permit at 6.	As noted in Response to Comments 2-28 and 2-29, the MPCA has found that the only source of pollution (above background concentrations) in the vicinity of the basin is the Minntac tailings basin.
2-38	Minnesota Center for Environmental Advocacy	MPCA agrees that pollutants in Timber Creek, the Dark River, the Sand River, Dark Lake, Admiral Lake, Little Sandy Lake, and Sandy Lake are directly traceable to the tailings basin's discharge.	MPCA agrees that there are pollutants in these water bodies attributable to the tailings basin and that pollutants released via surface discharges are directly traceable to the basin. However, the MPCA notes that the "pollutants" are naturally occurring elements and compounds, and therefore not *all* pollutants are sourced from the basin. Whether the pollutants are "directly traceable" appears to be a legal standard, not a factual question. The MPCA is not aware of any dye/tracer tests.
2-39	Minnesota Center for Environmental Advocacy	MPCA agrees that the Minntac tailings basin is a container and a discernible, confined and discrete conveyance from which pollutants are or may be discharged. See, e.g., Fact Sheet at 6 ("The mitigation efforts and investigations conducted at the basin have shown that there is significant seepage escaping the basin over its 8000+ acre footprint and that· this seepage is causing exceedances of water quality standards in surface water and groundwater in a broad area surrounding the basin."); id. (discussing "pollutants within the basin that will leak from it long-term.").	See response to Comment 2-7 regarding the definition of a "container." With respect to the statements in the permit, MPCA agrees. The basin water has pollutants and there is currently a point source discharge from the facility at SD001. MPCA takes the position that other surface seeps at the toe of the basin are also point source discharges. Also see Item A in the "Categorical Responses to Comments" regarding the applicability of the "point source" definition.
2-40	Minnesota Center for Environmental Advocacy	MPCA agrees that seeps from the Minntac tailings basin are discernible, confined and discrete conveyances from which pollutants are or may be discharged. See, e.g., Fact Sheet at. 7 (discussing MPCA treatment of seeps historically).	The MPCA agrees that surface seeps at the toe of the tailings basin can reasonably be attributed to the basin itself, and that these seeps are discrete, although the subsurface pathways the pollutants travel are unknown.
2-41	Minnesota Center for Environmental Advocacy	MPCA also agrees that there is no other, non-Minntac, significant point source discharge upstream of measured water pollution in the surface waters adjacent to the tailings basin.	See Response to Comments 2-29 and 2-37. (The MPCA has found that the only source of pollution (above background concentrations) in the vicinity of the basin is the Minntac tailings basin.
2-42	Minnesota Center for Environmental Advocacy	MPCA agrees that sulfate concentrations in regional lakes that are not influenced by mine drainage are very low as compared to the Twin Lakes and Dark River adjacent to the tailings basin.	The comment does not define what constitutes a "very low" concentration. The MPCA agrees that the sulfate concentrations in waters not affected by mining or other point source discharges are lower than the Twin Lakes and Dark River adjacent to the tailings basin.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
2-43	Minnesota Center for Environmental Advocacy	MPCA agrees that there is a significant ("extreme" in the agency's characterization) gradient between the tailings basin and surrounding wetlands and surface waters, causing significant groundwater flow to nearby surface waters. Fact Sheet at 11. This gradient information finds further support in the Baker Report, attached, as well as permittee-provided reports such as, for example, CRA, Groundwater Flow and Sulfate Transport Modeling Report prepared for U.S. Steel (June 2013).	The MPCA agrees with the statements contained in the permit and fact sheet. This includes the statement that there is a gradient across the tailings basin dams.
2-44	Minnesota Center for Environmental Advocacy	MPCA agrees that it has not identified (with a map or other form of designation in the Draft Permit or Fact Sheet) or assigned effluent limits to all the seeps in the tailings basin it knows are present in the tailings basin wall. "There are also other seepage points along the basin perimeter, but these have not been monitored comprehensively enough to assess changes in gross discharge from the basin." Draft Permit at 7.	The MPCA agrees with the statements contained in the permit and fact sheet.
2-45	Minnesota Center for Environmental Advocacy	MPCA agrees that there are "individual seeps or seepage zones" around the tailings basin that are discernible, confined and discrete conveyances from which pollutants are or may be discharged. Draft Permit at 32. MPCA agrees that some of these are potentially "discharging at greater than 5 gallons per minute" in parts of the year. Draft Permit at 32.	The MPCA agrees with the statements contained in the permit and fact sheet. The MPCA believes there are seeps around the basin, which is the basis for requiring construction of the Dark River SCRS.
2-46	Minnesota Center for Environmental Advocacy	MPCA agrees that MPCA staff have made a preliminary draft staff recommendation that Little Sandy Lake and Sandy Lake be considered waters used for the production of wild rice.	The MPCA staff did propose to include these waters as waters used for the production of wild rice and the agency's wild rice rulemaking proposal included to include them on the proposed list.
2-47	Minnesota Center for Environmental Advocacy	MPCA agrees that Little Sandy Lake and Sandy Lake have historically been waters used for the production of wild rice, and were so used on or after November 28, 1975.	The MPCA staff did propose to include these waters as waters used for the production of wild rice and the agency's wild rice rulemaking proposal included to include them on the proposed list. That list considered reasonable evidence that the water demonstrated the wild rice beneficial use since November 28, 1975. See Statement of Need and Reasonableness for the Amendment of the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Waters (MPCA 2017) at 47, 63.
2-48	Minnesota Center for Environmental Advocacy	MPCA agrees that "downstream surface waters" are potentially wild rice waters. Draft Permit at 27.	The MPCA agrees with the statements contained in the permit and fact sheet. The MPCA identified Little Sandy Lake and Sandy Lake as downstream waters. These waters were included on the staff recommendation list and in the wild rice rulemaking list.
2-49	Minnesota Center for Environmental Advocacy	MPCA views sulfate as a "pollutant of greatest concern and as a surrogate for other dissolved solids." Draft Permit at 24.	The MPCA agrees with the statements contained in the permit and fact sheet.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
3-1	Water Legacy	Both Minntac Tailings Basin direct discharge and discharge through groundwater that is shown to be hydrologically connected to surface waters of the United States should be controlled under the Clean Water Act NPDES permit program. - The MPCA should revise the Minntac Tailings Basin Draft Permit to apply NPDES controls to all tailings basin discharge to groundwater shown be hydrologically connected to surface waters in the Sand River and Dark River sub-watersheds.	See Item A in the "Categorical Responses to Comments"
3-1A	Water Legacy	Limits on Minntac Tailings Basin discharge to surface water through hydrologically connected groundwater must comply with all Minnesota surface water quality standards in conformity with the Clean Water Act.	See Item A in the "Categorical Responses to Comments"
3-2	Water Legacy	Under the Clean Water Act, Minnesota's existing wild rice sulfate standard of 10 milligrams per liter should be applied to all waters used for the production of wild rice affected by Minntac Tailings Basin discharge. - The MPCA should revise the Minntac Tailings Basin Draft Permit to require compliance with Minnesota's 10 mg/L wild rice sulfate standard in Sandy Lake, Little Sandy Lake and the Sand River.	See Item J in the "Categorical Responses to Comments"
3-2A	Water Legacy	The MPCA should determine, in consultation with tribal authorities, whether Dark Lake should also be considered a water used for the production of wild rice. If so, the Minntac Tailings Basin Draft Permit should require compliance with Minnesota's 10 mg/L sulfate standard in Dark Lake.	See Item J in the "Categorical Responses to Comments"
3-3	Water Legacy	Limits on specific conductance should be set for Minntac Tailings Basin discharge to Class B waters to protect aquatic life in compliance with the Clean Water Act and narrative water quality standards. - The MPCA should revise the Minntac Tailings Basin Draft Permit to limit specific conductivity in receiving waters to protect aquatic life as well as agricultural uses.	See Item N in the "Categorical Responses to Comments"
3-3A	Water Legacy	To set limits on specific conductivity for Minntac Tailings Basin discharge, the MPCA should use Minnesota data and reports and EPA benchmarks and methods to protect 95 percent of benthic invertebrate genera, with a predicted protective numeric value for specific conductivity for this permit of 320 µS/cm.	See Item N in the "Categorical Responses to Comments"
3-3B	Water Legacy	Waters impacted by Minntac Tailing Basin discharge through hydrologically connected groundwater should be evaluated for the reasonable potential to exceed the protective value for specific conductivity, and mitigation of tailings basin concentrations on specific conductivity as well as sulfate should be required in the final permit.	See Item N in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
3-4	Water Legacy	Minnesota's numeric water quality standard for manganese should be applied in compliance with state water quality standards and Clean Water Act protection of drinking water and human health. - The MPCA should reassess the reasonable potential of Minntac Tailings Basin discharge from SD001 to exceed the Dark River Class 1B water quality standard (50 µg/L) and health risk limit (100 µg/L) for manganese based on reasonable dilution assumptions reflecting deep seepage of manganese from the tailings basin.	See Response to Comments 2-21a, 2-21b, and 2-24.
3-4A	Water Legacy	The MPCA should disclose all available monitoring data and assess the reasonable potential of Minntac Tailings Basin discharge to cause or contribute to an exceedance of the applicable water quality standard and health risk limit for manganese.	The monitoring data in MPCA's possession is public data. Discharge monitoring report data is regularly updated on the agency website. Regarding the issue of causing or contributing to an exceedance, see response to Comment 2-21.
3-5	Water Legacy	Compliance mechanisms, (schedule of compliance), proposed for the Minntac Tailings Basin Draft Permit should be revised to provide reasonable assurance that pollution will be controlled and water quality protected. - The final Minntac Tailings Basin Permit should include concentration limits on all tailings basin pollutants with the reasonable potential to exceed numeric and narrative surface water standards in groundwater and hydrologically connected surface water -- hardness, bicarbonates, chlorides, total dissolved salts, specific conductance and potentially manganese as well as sulfates.	As noted in the Fact Sheet, sulfate is being used as a surrogate for other dissolved solids. Based on the characteristics of sulfate, basin treatment resulting in reduced sulfate would reduce other parameters of concern.
3-5A	Water Legacy	Final Minntac Tailings Basin Permit concentration limits for each parameter should be modeled based on realistic dilution given the existing levels of the parameter in tailings basin impacted groundwater.	The final concentration limit applicable to the basin was calculated based on modeling provided by U.S. Steel. The permit provides a method to revise the model after more complete information is available. Before revising the limit, MPCA would need to review the model to be satisfied that a revised limit would meet water quality standards (See Minn. R. 7001.0140). A change to the limit must follow public participation requirements. Minn. R. 7001.0190.
3-5B	Water Legacy	The final Minntac Tailings Basin Permit should set a date certain for each tailings basin concentration limit so that both interim and final limits must be met at the shortest reasonable time, not to exceed a specific identified date, stated so that the failure to attain the concentration limit is a permit violation	See Items F and G in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
3-5C	Water Legacy	The final Minntac Tailings Basin Permit should include a provision stating that any revisions of permit limits, timing or other requirements shall require public notice and comment.	See Item F and Response to Comment 1-6c. The permit specifies that a change in the final basin limit would require the permit be modified. The modification process would include public comment unless a more stringent (i.e. lower) limit was being added. Minn. R. 7000.0190.
3-6	Water Legacy	Compliance mechanisms, (Monitoring), proposed for the Minntac Tailings Basin Draft Permit should be revised to provide reasonable assurance that pollution will be controlled and water quality protected. - The final Minntac Tailings Basin Permit should retain monitoring at SD002 or the nearest measurable flow of surface seepage, and should require monitoring at multiple additional surface seepage points along the perimeter and in the vicinity of the toe of the dam to represent surface discharge on all sides of the Tailings Basin.	See Response to Comment 2-16 and See Item I in the "Categorical Responses to Comments".
3-6A	Water Legacy	The final Minntac Tailings Basin Permit should require collection of analytic data on the full range of effluent parameters required for permit reissuance at several representative locations where effluent may discharge to surface waters and groundwater, which locations should be identified in the Permit.	The permit requires extensive analysis of representative seepage and tailings basin process water to be submitted for review during permit reissuance. The basis for each location is explained in the fact sheet.
3-6B	Water Legacy	The final Minntac Tailings Basin Permit should require installation of multiple nested wells along the perimeter of the tailings basin (estimate of 30-40 additional wells) to assess background condition, fate and transport of Tailings Basin pollutants and the efficacy of mitigating tailings basin concentrations to achieve compliance with standards applicable to impacted surface and groundwater.	See Item L in the "Categorical Responses to Comments"
3-7	Water Legacy	Compliance mechanisms, (Toxicity Testing), proposed for the Minntac Tailings Basin Draft Permit should be revised to provide reasonable assurance that pollution will be controlled and water quality protected. - Comprehensive analytic data on existing Minntac Tailings Basin effluent (Minn. R. 7001.0160) should be updated prior to issuance of the final Minntac Tailings Basin Permit.	The permit conditions, including the compliance schedule investigative activities, will provide a comprehensive understanding of what is necessary to meet applicable water quality standards and protect uses in surrounding waters. Regarding the scope of toxicity testing, see Item M in the "Categorical Responses to Comments".
3-7A	Water Legacy	The final Minntac Tailings Basin Permit should reconcile and disclose the chemical composition, volume and aquatic toxicity of process additives, including flocculants and flotation reagents, the use of which is implicitly authorized in the permit.	The additives have been updated in the facility description. All chemical additives used at the facility have been reviewed by MPCA toxicology staff.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
3-7B	Water Legacy	The final Minntac Tailings Basin Permit should set a whole effluent toxicity limit of 1.0, require toxicity testing of undiluted effluent from both the east and the west sides of the tailings basin and conduct testing using at least one invertebrate species in Minnesota ecoregion streams known to be sensitive to conductivity and the major anions and cations in Minntac Tailing Basin discharge.	Items M & N
3-8	Water Legacy	Monitoring and pollution reduction mechanisms in the Minntac Tailings Basin Draft Permit should be revised to reflect impacts of excessive sulfate discharge on mercury methylation and phosphorus release from sediments. - The final Minntac Tailings Basin Permit and Fact Sheet should include a comprehensive analysis of the multiple factors in receiving waters that make discharge of elevated sulfate to the Sand River and Dark River sub-watersheds and the Little Fork River and Rainy River watersheds a high-risk situation for mercury in fish tissue, eutrophication and turbidity impairments.	See Item K in the "Categorical Responses to Comments"
3-8A	Water Legacy	The final Minntac Tailings Basin Permit should require monitoring for methylmercury, reactive phosphorus and total phosphorus in both effluent and receiving waters, with similar monitoring in unimpacted background waters.	See Item K in the "Categorical Responses to Comments"
3-8B	Water Legacy	The final Fact Sheet and Minntac Tailings Basin Permit schedule of compliance should discuss whether proposed treatment technologies and pollution reduction requirements are appropriate and sufficient to reduce risks of mercury methylation and phosphorus release from sediments affecting receiving waters.	See Item K in the "Categorical Responses to Comments"
4-1	EPA	The draft permit does not address, under MPCA's approved NPDES program and accordance with the CWA, all discharges to surface waters (Specifically including via groundwater) from this tailings basin. MPCA acknowledges in the fact sheet that discharges from this 8,700 acre tailings basin are causing exceedances of surface water quality standards. Based on this and facts supporting this conclusion, the CWA requires all such discharges to surface waters from the tailings basin be authorized by an NPDES permit.	See Item A in the "Categorical Responses to Comments"
4-2	EPA	The Sand River is not listed among the receiving waters authorized to receive discharges under the draft NPDES permit. Failing to include the Sand River as a receiving water to which U.S. Steel is authorized to discharge under the NPDES permit would constitute a discharge of pollutants to surface waters in the absence of NPDES permit coverage, a violation of the Clean Water Act.	See Item B in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
4-3	EPA	Timber Creek is not listed among the receiving waters to which U.S. Steel would be authorized to discharge to under this NPDES permit.	See Item B in the "Categorical Responses to Comments"
4-4	EPA	There is evidence, based on aerial imagery that the tailings basin is creating ponding in wetlands immediately adjacent to the basin on both the east and west sides. However, the permit would not authorize these discharges, as wetlands are not among the surface waters to which the permittee would be authorized to discharge and, if confirmed, would constitute a discharge of pollutants to surface waters in the absence of NPDES permit coverage, a violation of the Clean Water Act.	See Item B in the "Categorical Responses to Comments"
4-5	EPA	None of the compliance schedules comport with 40 C.F.R. 122.47, as they do not contain dates by which the permittee must attain compliance with final effluent limits, and do not contain enforceable milestones that ensure that the permittee is attaining compliance as soon as possible.	See Item F in the "Categorical Responses to Comments"
4-6	EPA	The draft permit includes schedules that require submittals of plans and schedules that then would become part of the permit. It appears that these submittals would constitute permit modifications that do not follow the procedures for modifying permits, including issuing public notice, in 40 C.F.R. 124.	See Item F in the "Categorical Responses to Comments"
4-7	EPA	The Sand River and Twin Lakes are downstream waters receiving discharges from the tailings basin and it appears that wild rice production is an existing use in these water bodies as defined by 40 C.F.R. § 131.3(e). Therefore, MPCA needs to include the Sand River in the draft NDPES permit including water quality based limits that will meet all applicable water quality standards [including the state's wild rice standard based on the documented wild rice stands in the Sand River and Twin Lakes, or explain why this standard does not apply].	See Item J in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
4-8	EPA	Dark River at (SD001) - MPCA calculated WQBELs, shown in the fact sheet, for sulfate at 1221 mg/L daily maximum and monthly average of 1080 mg/L. The Draft Permit incorrectly expresses the monthly average limit as 1221 mg/L and does not contain the necessary daily maximum limit. Similarly, for specific conductance the fact sheet says that the daily maximum limit should be 1197 mg/L and the average monthly limit should be 1072 mg/L, but MPCA has only included an incorrect monthly average limit at 2430 mg/L. In addition, the fact sheet indicates that MPCA's calculation of the average monthly limit is based on 2x per month monitoring, but the permit only requires 1x per month monitoring. No justification for the discrepancy is included in the Fact Sheet.	Completion of the SCRS under the permit compliance schedule will eliminate surface discharge at this location. The permit does not assign limits to Station SD001 for the period prior to the completion of the Dark River SCRS because the MPCA has determined that treatment during this interim period is not feasible.
4-9	EPA	Class 1B Reach of the Dark River (AUID 09030005-525) - the fact sheet states that discharges from the tailings basin are contributing to an exceedance of water quality standards (sulfate) that applies in the section of the Dark River downstream of the tailings basin that is designated as a Class 1B water. MPCA is proposing to implement a limit based on the criteria that apply in the Class 1B reach at a compliance monitoring station upstream, rather than at a compliance point in the Class 1B segment. MPCA appears to be applying a rationale that the concentration of sulfate at the upstream location ("SW003") can be approximately double the criteria that must be met in the downstream Class 1B segment of the River, based in part on available dilution. It is unclear how MPCA can authorize a discharge, to a surface water that is not meeting criteria, and limit sulfate to more than double the concentration necessary to protect the criteria.	Monitoring for parameters related to the Class 1B use for the portion of the Dark River that is a designated trout reach will now be at the SW004 surface water station, located where County Road 65 crosses the Dark River. The permit contains a compliance schedule that requires elimination of the SD001 discharge as soon as possible. In addition, the permit contains a schedule to reduce discharges to groundwater sufficient to meet water quality standards at this monitoring location in the shortest reasonable period of time.
4-10	EPA	MPCA should conduct the reasonable potential analysis with the information that it has, and in addition should add monitoring requirements to the draft permit, for all of the surface water and discharge monitoring stations, monthly monitoring for at least the following parameters that have been detected in the discharge: Selenium, Arsenic, Cobalt, Copper, Manganese, and Thallium.	Reported concentrations of selenium, arsenic, cobalt, copper and thallium do not indicate that reasonable potential to cause or contribute to an exceedance of a water quality standard exists. For manganese, see the section in the Fact Sheet titled "iron and manganese monitoring."

Comment Number	Commenter Name	Summary of Comment	MPCA Response
4-11	EPA	In a few paragraphs in the permit, MPCA requests that the company apply for permit modifications. As you are aware, the permit may be modified during its term for cause under 40 C.F.R. § 122.62. MPCA need not wait for the permittee to submit an application for permit modification, if, for example, MPCA promulgates and EPA approves new water quality standards that need to be applied in the permit, as this would be a cause for permit modification under 40 C.F.R. § 122.62(a)(2).	The requirement for U.S. Steel to apply for permit modification has been removed from the permit. MPCA will rely on its existing legal authority to amend the permit. See Minn. R. 7001.0170.
4-12	EPA	Federal Effluent Limitations Guidelines at 40 C.F.R § 440.10 - It is unclear how MPCA is implementing the zero discharge requirements at 40 C.F.R. § 440.12(c) which requires that the facility not discharge wastewater from mills ... with the exception of "a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and ... the annual evaporation ... ". In this case the processing facility is located at the adjacent mining area which is covered under NPDES Permit No. MN0052493. In order to evaluate compliance with 40 C.F.R. § 440.12(c), discharges from the mining area permit and the tailings basin area permit would have to be considered. The permit would have to require monitoring and reporting of all of the discharges from the tailings basin rather than limiting the monitoring, reporting, and therefore the estimation of the volume of discharge, to just that which passes through the monitoring station at SD001.	The Development Document for Effluent Limitations Guidelines and Standards for the Ore Mining and Dressing Point Source Category, as well as 40 C.F.R. § 440.10, clearly separate "mining" and "milling" operations. 40 C.F.R. § 440.12(c) applies only to the mill, which is in the same watershed as the tailings basin, not the adjacent mining area. For the purpose mentioned here, the ELG Development Document classified the Minntac Tailings Basin as a "zero discharge" facility. The monthly precipitation and potential evaporation monitoring is included in the permit, along with the requirement that annual surface discharge from the tailings basin not exceed precipitation minus potential evaporation over that area.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
4-13	EPA	Construction of Dark River Seep Collection and Return System - It is unclear why MPCA is requiring the permittee to build a Seep Collection and Return System on the west side of the basin. There is no basis for this requirement provided in the fact sheet, and to our knowledge there is limited information as to how the system is predicted to resolve outstanding water quality standards exceedances in the Dark River. In a letter from EPA to the St. Paul District Army Corps of Engineers dated September 16, 2015 regarding the pending CW A Section 404 application for the construction of the Dark River Seepage Collection and Return System (SCRS), we articulated concerns regarding the substantial changes in hydrology and loss of function to wetlands within the project boundary as well as adjacent wetlands; specifically the effect the proposed discharges will have on water circulation, fluctuation, water chemistry, as well as secondary effects on aquatic ecosystems. The wetlands and open water complexes within the project footprint, as both conduits and storage basins for mine tailings seep water, will be subjected to increased concentrations of mine tailings constituents (e.g. hardness, total dissolved solids, specific conductance, alkalinity and sulfate), thus resulting in lower quality wetlands with diminished functional capabilities. In the fetter, EPA objected to the construction of the Dark River SCRS because of a lack of compliance with the 404(b)(I) Guidelines. As such, EPA recommended a comprehensive monitoring plan and additional compensatory mitigation be required to address our concerns regarding the determination of wetland impacts and compensatory mitigation requirements.	See Item C in the "Categorical Responses to Comments"
4-14	EPA	We recommend that you provide latitude-longitude coordinates in the monitoring station identification descriptions to improve the precision of this information in the permit and fact sheet	Decimal degree coordinates have been included in the revised permit, where available.
4-15	EPA	Throughout the draft permit MPCA interchanges different names for monitoring stations. For example, "CR668" is sometimes used to refer to SW003 or D-1. To improve the clarity of the permit, we suggest MPCA revise the permit to refer to monitoring stations by the same name throughout the permit.	The final permit uses consistent names where possible. Due to the long history of the site, there are many older documents and references that use other names for monitoring stations.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
4-16	EPA	Internal outfall monitoring stations WS002, WS003, WS004, WS005, WS006 and WS007 were all removed from this permit when compared to the previous draft. Please provide an explanation as to why monitoring at these locations is no longer needed or desired.	Stations WS002, WS003, WS004, and WS005 were added to the permit after a 2008 Stipulation Agreement to monitor for conditions related to the requirement that there be no net increase in calcium and sulfate loading to process wastewater due to the operation of the Line 3 Scrubber Blowdown System. Since these conditions have been satisfied by offsetting the loading by utilizing Sump 6 as a source of replacement water, this monitoring is no longer required, and these stations will not be included in a reissued permit. Stations WS006 and WS007 were utilized to monitor for potential amine toxicity in the fine tailings wastestream to the basin. Since amine toxicity has not been an issue over decades of monitoring and because Whole Effluent Toxicity Testing will be conducted at the SD001 discharge station, monitoring at stations WS006 and WS007 will not be included in the reissued permit.
4-17	EPA	Please provide an explanation as to why the limit for oil and grease and monitoring for dissolved oxygen at SD001 have been removed from this draft permit when compared to the previously issued permit.	Oil and Grease is not a required parameter under Part 440 Categorical Standards. Monitoring was originally included due to concerns of utilizing petroleum contaminated materials in the grinding mills. New information (in the form of extensive monitoring) has not shown any evidence of these materials entering basin effluent in detectable quantities.
4-18	EPA	Please provide an explanation as to why dissolved oxygen monitoring requirements were removed from the surface water monitoring stations in the draft permit.	Although this information would be useful in completing site investigation activities, it is not a parameter that is expected to be significantly impacted by facility operations.
4-19	EPA	Please explain why the monitoring station SW004, which was proposed in the pre-public notice draft of the permit that EPA reviewed in 2014 to be located in the Class 1B reach of the Dark River has been removed completely from this draft of the permit.	Monitoring station SW004 has been included in the permit.
4-20	EPA	Please explain why monitoring for sulfate was removed for monitoring station SW005 during the final period.	The permit includes monitoring for sulfate at SW005 during the final period.
4-21	EPA	MPCA has included a schedule in the draft permit to require the permittee to reduce the concentration of sulfate in the basin pool water ultimately to 357 mg/L "within ten years of permit issuance, or the shortest reasonable period of time ... ". If MPCA intends for this schedule to end after ten years, the language should be revised to be clear that ten years is the maximum amount of time allotted to the permittee in this schedule. Also, neither this schedule nor any other included in the draft permit comports with 40 C.F.R. § 122.47.	See Items F and G in the "Categorical Responses to Comments". The MPCA has revised the schedule in question.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
4-22	EPA	Aside from this schedule also failing to meet the requirements of 40 C.F.R § 122.47 because it lacks enforceable milestones, and a final compliance date, the schedule also appears to remove from MPCA the ability to approve any of the plans and schedules that the permittee would submit under the schedule. We recommend that the language be changed to provide the permittee with explicit plan requirements, specifications, quality assurance and milestones for any plan to allow the permittee to move forward in implementation of the plan once it is developed in accordance to those requirements. Such plans should be provided to MPCA 30 days prior to implementation. The permit should contain explicit, enforceable milestones that require the permittee to make progress toward and ultimately achieve compliance with water quality standards.	See Item F in the "Categorical Responses to Comments". The MPCA has revised the schedule in question.
4-23	EPA	While this schedule does require the permittee to construct and operate the Seep Collection and Return system by a date certain, and the text refers to monitoring requirements at SW003, there is no link to any "Final Period" or date at which the sulfate limit that is effective in the final period would come into effect. Therefore, this schedule also fails to comport to 40 C.F.R. § 122.47.	See Item F in the "Categorical Responses to Comments" and Response to Comment 1-29.
4-24	EPA	The schedule indicates that the permittee or MPCA would be evaluating the "mathematical relationship" of results from samples taken at "CR668" and "CR65" for 12 months. The text does not explain what the mathematical relationship should be compared to or evaluated against. There are no monitoring requirements in the permit at "CR65" (a.k.a. SW004), so it is unclear how the permittee is supposed to compare new data taken from the crossing ofCR65 at the Dark River to data taken at SW003 (a.k.a. "CR668"). It is also not clear what MPCA is requiring the permittee to request in terms of a permit modification in this paragraph. As stated earlier, MPCA can modify the permit for cause under 40 C.F.R § 122.62, and would not necessarily need the permittee to apply for a permit modification if one of the causes listed in 40 C.F.R. § 122.62(a) are present.	See response to comment 1-27. The final permit does not include the mathematical relationship between sampling points.
4-25	EPA	Whole Effluent Toxicity (WET) testing is required by the draft permit in the Sand River watershed at SW005, which is over a mile from the basin. WET testing should be conducted on the effluent, and therefore on a sample taken from a monitoring station closer to the basin so that the sample can be as representative of the effluent as possible.	See Item M in the "Categorical Responses to Comments". The revised permit includes WET testing at SD001 and does not require WET testing at SW005.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
5-1	Grand Portage Band of Chippewa and Fond du Lac Band of Lake Superior Chippewa	The draft permit indicates that the only discharge that requires permitting under the Clean Water Act, and the only discharge that MPCA is authorizing, is to the Dark River. Although it has been demonstrated that the barrier and pump-back system installed along the eastern side of the tailings basin has reduced the discharge to the Sand River and Twin Lakes by 40-60%, the discharge has not been eliminated. Page 20 of the "fact sheet" however, states that there has been no discharge from SD002 (the surface discharge point on the east side of the tailings basin) after 2010 when the barrier and pump back system was installed. This is patently false and must be changed. The draft permit and fact sheet must plainly describe the discharge(s) MPCA is authorizing under this NPDES permit. 40 CFR § 122.44, "the reasonable potential for a discharge to cause or contribute to an excursion of WQS" must be applied to all of the surface waters where MPCA authorizes discharges.	See Item B in the "Categorical Responses to Comments"
5-2	Grand Portage Band of Chippewa and Fond du Lac Band of Lake Superior Chippewa	Emailed comments from the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) on the pre-public notice draft NPDES permit for the Minntac tailings basin, which was distributed to a limited number of interested parties in December 2014, identified numerous sites along the exterior toe of the tailings basin dikes that "create ponded features with measurable flow". These areas of clearly visible ponded water, as seen in an attached Google Earth aerial photo, south of SD002 and connected to Admiral Lake, are connected by continuous channels to waters of the state and the U.S., and certainly meet the MPCA's own stated criteria for requiring NPDES permit controls. Yet in spite of this indisputable evidence of surface seepage, this draft permit removes all monitoring requirements at SD002.	See Item I in the "Categorical Responses to Comments"
5-3	Grand Portage Band of Chippewa and Fond du Lac Band of Lake Superior Chippewa	The interim limits on pages 12-13 of the draft permit appear to guarantee that US Steel will not be required to follow through with installing any tailings basin wastewater treatment, and will be allowed to continue to discharge highly polluted water for as long as the company is in operation.	The interim limits would only have applied in the period of time until the Dark River Seepage Collection and Return System is constructed. Regarding the interim limits, see Response to Comment 1-25. Upon completion, discharge is not authorized from SD001.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
5-4	Grand Portage Band of Chippewa and Fond du Lac Band of Lake Superior Chippewa	But, if in fact MPCA believes that the only tailings basin discharge is to the Dark River, then the permit should only authorize a discharge to the Dark River, thereby allowing for a legal remedy (discharging without a permit) for the known discharge to the Sand River and Twin Lakes. The convoluted description of discharge to the Sand River, and permit limits for the Sand River and the Twin Lakes, indicate that the real purpose is to offer "permit-as-a-shield" protection to the company without providing adequate protection for the receiving waters in the form of a water-quality based effluent limits (WQBELs) or a total maximum daily load (TMDL). The permit must be re-written to accurately describe the tailings basin discharges MPCA is authorizing. If MPCA is not authorizing a tailings basin discharge to the Sand River, it must be clearly articulated in the permit.	See Item B in the "Categorical Responses to Comments"
5-5	Grand Portage Band of Chippewa and Fond du Lac Band of Lake Superior Chippewa	The MPCA should revise the draft permit to require compliance with the existing federally-approved sulfate standard (10 mg/l) in Sandy and Little Sandy Lakes and the Sand River. The agency should affirm that wild rice production is an existing use in the Dark River watershed, and apply the wild rice sulfate standard here as well.	See Item J in the "Categorical Responses to Comments"
5-6	Grand Portage Band of Chippewa and Fond du Lac Band of Lake Superior Chippewa	Although both the draft permit and fact sheet discuss the reasonable potential for a discharge to cause or contribute to an excursion from water quality standards (WQS), the reasonable potential analysis is only applied to the Dark River, and only for WQS applicable to Class 3 and 4 (Industrial and Agricultural Uses). Neither the Fact Sheet or draft NPDES permit clearly state the applicable Class 2 (Aquatic Life Use) and trout stream (Class 2A) limits for the Dark River watershed.	A reasonable potential analysis was performed on the data from SD001 U.S. Steel submitted in support of the permit application. Results indicated there was not reasonable potential for the discharge to the Dark River to cause or contribute to exceedance of Class 2 water quality standards. Therefore, WQBELs for Class 2 pollutants were not included in the permit. To test for the possibility of unknown pollutants or combinations of pollutants impacting the aquatic biota, whole effluent toxicity was required in the draft permit.
5-7	Grand Portage Band of Chippewa and Fond du Lac Band of Lake Superior Chippewa	The draft permit provides no analysis of any impacts to aquatic life, and includes no water quality based effluent limitations (WQBELs) to protect fish or other aquatic biota in any of the Class 2 waters that are impacted by the discharge from the Minntac tailings basin. The MPCA applies only Class 1B drinking water standards and Class 4B agricultural standards (adult livestock drinking water) for sulfate (250; 1000 mg/l) and total dissolved solids (700 mg/l); Class 4A agricultural standards for bicarbonates (250 mg/l) and specific conductance (1000 µS/cm); and Class 3C industrial standards for calcium and magnesium as hardness (500 mg/l) and chlorides (250 mg/l).	See Response to Comment 5-6.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
5-8	Grand Portage Band of Chippewa and Fond du Lac Band of Lake Superior Chippewa	EPA published draft guidance this month to assist states and authorized tribes to derive numeric limits to protect aquatic life from the acute and chronic effects of elevated ionic concentration, measured as specific conductance.21 The Conductivity Criteria Methods draft confirms that elevated specific conductance is causally related to reduced benthic macroinvertebrate (BMI) community metrics, and that aquatic life criteria should be calculated based upon survival of 95% of the BMI genera. EPA's Office of Research and Development reviewed an analysis performed by two retired Minnesota environmental regulatory staff, which applied the EPA methodology to large datasets from northeastern Minnesota ecoregions22. This analysis concluded that the 300 µS/cm benchmark established for Appalachian streams would likely result in extirpation of 5% or more of the BMI genera, and EPA's review validated their conclusions.23 In summary, these analyses strongly suggest that a more restrictive specific conductance limit should be derived and applied in this permit to protect aquatic life in waters that are impacted by Minntac tailings basin discharges.	See Item N in the "Categorical Responses to Comments"
5-9	Grand Portage Band of Chippewa and Fond du Lac Band of Lake Superior Chippewa	Many, if not all, of the "monitor only" pollutants in the draft NPDES permit have been measured to exceed MN WQS, as demonstrated in Minntac's own Data Monitoring Reports. These pollutants must have interim limits and final limits that comply with MN WQS. Discharge monitoring reports over a long period of record point to manganese as another constituent of concern for likelihood of exceedance of Minnesota's drinking water standard, yet there are no limits on manganese in Class 1 waters in this draft permit. The MPCA must include interim and final limits for manganese, iron, fluoride, specific conductance, chloride, and sulfate, because all of these pollutants have exceeded MN WQS as detailed in Minntac's own data monitoring reports and provided to MPCA.	See responses to comments 2-21 and 2-24.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
5-10	Grand Portage Band of Chippewa and Fond du Lac Band of Lake Superior Chippewa	The schedule of compliance offered in this draft permit allows more than one year to develop a plan to reduce pollutants to surface water, and three years for groundwater. This is unacceptable because, as is plainly obvious when reviewing multiple previous schedules of compliance for this facility, beginning in 1989, US Steel has already been granted twenty-seven years to come up with a plan to reduce pollutants being released to surface and groundwater. And, during that period of time they have pilot-tested multiple treatment approaches. Yet, US Steel Minntac has never been required to install and use any of the treatment options they have been given time to study (and freedom from actual compliance) during the previous 27 years.	See Item F in the "Categorical Responses to Comments"
5-11	Grand Portage Band of Chippewa and Fond du Lac Band of Lake Superior Chippewa	The Compliance Schedule must require the selection and installation of wastewater treatment within one year of permit reissuance, and include dates when final effluent limits must be achieved.	It is the task of the Permittee to identify and implement appropriate treatment or mitigation methods to meet permit requirements. MPCA does not believe that requiring a one year timeframe to design and construct a wastewater treatment system of unknown specification is reasonable.
6-1	1854 Treaty Authority	The largest issue that stands out in reviewing the documents is the proposed schedule of compliance. The draft permit essentially talks about more evaluation, and little detail or timelines are provided for implementation of activities and ultimately compliance with water quality standards.	See Item F in the "Categorical Responses to Comments"
6-2	1854 Treaty Authority	The purpose of the additional evaluation is to identify feasible technologies for non-mechanical or mechanical treatment to reduce the concentration of sulfate within the tailings basin to 800 mg/L within five years of permit issuance, and 357 mg/L within ten years from permit issuance, or in the shortest reasonable period of time. However, this would only meet the sulfate drinking water standard (250 mg/L) at the property boundaries and does not address the existing wild rice sulfate standard (10 mg/L).	See Item E in the "Categorical Responses to Comments"
6-3	1854 Treaty Authority	The language ("or in the shortest reasonable time") implies that ten years is not a hard deadline to meet this sulfate threshold in the tailings basin and it may be even longer. The proposed schedule of compliance does not get the facility in compliance with water quality standards.	See Item G in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
6-4	1854 Treaty Authority	The sulfate levels in the Twin Lakes are elevated from the Minnesota water quality standard of "10 mg/L, applicable to water used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels" (Minnesota Rules, part 7050.0224, subp. 2). The approach of the draft permit is to ignore this existing standard (a potential violation of the Clean Water Act), and deal with it if/when revisions to the standard are completed. The permit states that "if rulemaking designates any water body downstream from the tailings basin as a water to which the wild rice beneficial use applies, the Permittee shall submit an application for permit modification to conduct a reasonable potential analysis and incorporate any necessary effluent limit(s) to protect wild rice within 90 days of the rule being filed with the Secretary of State." Besides disregarding the existing standard, the permit calls for more evaluation and no timeline for compliance even when a revised standard is in place. The MPCA has made a preliminary determination that the wild rice standard will apply in the Twin Lakes (at the inlet to Little Sandy Lake), so the permit should address this water quality standard.	See Item J in the "Categorical Responses to Comments"
6-5	1854 Treaty Authority	Surface water monitoring point SW001 (Sand River at Highway 53) includes monitoring only for sulfate. We would like to note that wild rice is found downstream of this point, and the sulfate water quality standard should apply. It is our understanding that this will theoretically be met if the upstream point SW005 (Sand River inlet to Little Sandy Lake) is in compliance with this standard. However, although the draft permit includes monitoring for sulfate at SW005 in the interim period, it does not include any mention of sulfate (a limit or monitoring only) at SW005 in the final period. This point, or even further upstream at SW007 at Admiral Lake, should be the point of compliance.	See Item J in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
6-6	1854 Treaty Authority	To satisfy a Special Condition under a United States Army Corps of Engineers Wetland Permit (2011-00823-JCB), U.S. Steel must complete and implement a Twin Lakes Wild Rice Restoration Opportunities Plan. The permit states that the plan shall include: "The development of a five-year wild rice restoration and monitoring program for those areas of the Twin Lakes that show the greatest potential for restoration based on best information available in the time frame allowed for submitting its report." The first full year of the project was completed in 2014, and U.S. Steel submits annual reports summarizing activities to the Army Corps. Actions are needed in the Twin Lakes to restore conditions (water quality, sediment quality, water depth, etc.) favorable for wild rice growth. The restoration work should meet the requirements and intent outlined in the Army Corps permit, with the goal to restore wild rice in the Twin Lakes. However, the draft MPCA pe1mit does not address or support this restoration work, specifically water quality and quantity requirements in relation to wild rice.	See Item J in the "Categorical Responses to Comments"
6-7	1854 Treaty Authority	On the Dark River side of the tailings basin, the draft permit makes no mention of wild rice. However, wild rice has been reported in Dark Lake and the information has been previously shared with MPCA. Wild rice was identified in Dark Lake on 7/30/2012 during a survey by the Minnesota Biological Survey. Field crews from the University of Minnesota also identified wild rice during visits on 7/10/2013 and 9/5/2013. Under an effort coordinated by the Great Lakes Indian Fish & Wildlife Commission, wild rice was observed on 7/31/2016 and photos are available. The Minnesota Department of Natural Resources maintains a list of wild rice waters in the state, and Dark Lake has been included. Since Dark Lake supports wild rice, the appropriate sulfate standard should apply. The draft permit includes a surface water monitoring point SW003 (Dark River at County Road 668) upstream of Dark Lake with a final compliance level of 525 mg/L sulfate. This will not allow for compliance with the wild rice standard in Dark Lake, and we suggest that a compliance point for sulfate in the Dark River at its entrance to Dark Lake should apply.	See Item J in the "Categorical Responses to Comments"
7-1	Great Lakes Indian Fish and Wildlife Commission	The PCA "fact sheet" identifies "ponded features" as subject to a NPDES permit (pg.7). Yet there are surface waters surrounding the basin that fit this description and are not proposed for regulation under a NPDES permit.	See Item I in the "Categorical Responses to Comments". The permit requires collection of seeps on the west side and northwest corner of the basin, as well as yearly monitoring for new seeps that discharge to surface water.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
7-2	Great Lakes Indian Fish and Wildlife Commission	Distinction between "Discharge(H)" and "Discharge(NPDES-CWA)" in order to avoid NPDES permitting for the basin's east side discharges is unsupported by the facts - The CWA applies to water of the U.S. which include waters connected to navigable waters and wetlands connected to other waters the U.S. At the toe of the basins there are many wetlands, ponds and channels that are receiving water from the basin through the berm. It is difficult to find a rational for regulating some of the water passing through the berm (i.e. SD001) with a NPDES permit, yet not regulating other water that passes through the berm in an identical manner (e.g. uncaptured seepage at SD002 and seepage at other points along the toe that forms ponded features and stream channels).	Modeling and analysis of seepage flow indicates that it is unlikely any significant amount of water passes directly through the tailings basin dam, but rather enters the subsurface beneath the dam's fine tails core. Although MPCA has treated significant emergent seepage at the base of the dams using NPDES permits, it is an unsettled legal question whether these discharges are governed by NPDES regulations under the Clean Water Act. The permit regulates the discharges through groundwater using state legal authority, which is settled.
7-3	Great Lakes Indian Fish and Wildlife Commission	Seepage emerging near the toe of the basin does not travel as "deep seepage" - The concept, proposed in the "fact sheet", that deep seepage travels substantial distances underground to receiving waters such as the Twin Lakes may have some validity, yet does nothing to address the fact that much seepage never travels any significant distance through the underlying aquifer but discharges to surface waters immediately adjacent to the basin berm and is not captured... The state recognizes that "basin-impacted groundwater is currently reaching surface waters and having an impact on those surface waters" (fact sheet pg.38), yet maintains the tenet that the water travels over extensive distance before discharging to surface waters and therefore the discharge is not covered by the CWA. That tenet is not supported by observation or basic hydrogeology.	See Item A in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
7-4	Great Lakes Indian Fish and Wildlife Commission	The draft permit overlooks existing water quality standards for the Sand River watershed - The Fact Sheet clearly states that the tailings basin is causing an exceedance in downstream water quality standards (Fact Sheet: pg.17, pg.35), yet the draft permit ignores the current 10 mg/L surface water standard in the Twin Lakes. The exceedance of the 10 mg/L sulfate standard is extremely well documented, has been occurring for many years and has not been remedied by the attempted capture of seepage at SD002. While the draft permit considers some of the water quality standards in the Dark River when setting compliance goals for water quality in the tailings basin, it ignores the water quality standards in the Sand River and Twin Lakes. The permit and compliance schedule is written as if there is no existing sulfate wild rice standard nor any identified wild rice waters downstream of the basin. Neither of these is the case. The Fact Sheet explains that the state legislature barred any consideration of sulfate in setting permit requirements but state legislatures do not have the authority to override water quality regulations approved under the Clean Water Act.	See Item J in the "Categorical Responses to Comments"
7-5	Great Lakes Indian Fish and Wildlife Commission	The schedule of compliance appears to have no schedule for actual compliance with surface water standards in the Sand River watershed: There appears to be no deadline or even interim targets for meeting surface water quality standards in the Sand River watershed. The permit has only requirements for research and descriptions of possible steps toward pollutant reduction. The rational seems to be the MN legislature's move to prevent enforcement of the state sulfate standard that clearly applies to the Twin Lakes. The applicant is being asked to repeat or simply polish past work rather than take real steps toward reducing contaminant load. The compliance schedule described in the "fact sheet" under "SDS Schedule for Deep Seepage - Final Compliance Plan" (pg.40) makes no mention of the need to reduce sulfide load to meet downstream water quality standards in the Sand River. The only goal appears to be to meet the groundwater standards by reducing concentrations in the basin. Without identification of specific reductions within the permit period and with no requirement that standards be met within any defined period, this permit requires no concrete steps toward meeting surface water quality standards in the Sand River basin.	See Item F in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
7-6	Great Lakes Indian Fish and Wildlife Commission	The NPDES permit for the headwaters of the Dark River overlooks important pollutants: In 2015 and 2016 we cooperated in sampling of the upper reaches of the Dark River and found exceedances or near exceedances of multiple water quality parameters. For example: in July 2016, at the Sherwood Anderson Road (Co. Rd. 668) bridge, approximately 7 km downstream of the basin, the Dark River was high in specific conductance (1490-1585 uS/cm), TDS (1170 mg/l), alkalinity (415 mg/l), sulfate (476 mg/l), Mg (152 mg/l), P (84 ug/l), Ca (82 mg/l), Se (4.1 ug/l), and moderately high in pH (8.0), fluoride (0.43 mg/l), chloride (45 mg/l), bromide (0.34 mg/l), Li (8.2 ug/l), B (143 ug/l), Na (34 mg/l), K (6.4 mg/l), Mn (127 ug/l), Rb (5.4 ug/l), Sr (219 ug/l), Cs (0.11 ug/l), Ba (35 ug/l), and U (1.4 ug/l), and was low in DO (5.7 mg/l, 69%). The water at this site was in exceedance of the state specific conductance criterion of 1000 uS/cm, the TDS criterion of 700 mg/l, and the water hardness criterion (calculated from ICP-MS Ca and Mg concentrations as 831 mg/l as CaCO3 and compared to the category 3C criterion of 500 mg/l). The water was also in exceedance of the state phosphorus criterion (30 ug/l). In addition, the selenium concentration exceeded the 2016 EPA recommended criterion for streams and rivers (3.1 ug/l) and manganese exceeded the EPA human health criterion. For rice waters in the Dark River, the sulfate concentration far exceeded the state criterion of 10 mg/l. Sampling was conducted up and downstream on the Dark River and indicated that the concentration of several parameters increased as one sampled closer to the basin. A complete report of the sampling in the upper Dark River will be released in mid-2017. The parameter list for monitoring and limits in the draft permit is inadequate and should be expanded to include those parameters identified above that may be exceeded during the 5-year permit period. Including those parameters in sampling requirements for "Application for Permit Reissuance" (pg. 31 of the draft permit) is inadequate, particularly since the state has not required renewal of permits in a timely manner in the past.	MPCA reviewed historic phosphorus and selenium data, and found that the data did not indicate that basin effluent had reasonable potential to cause or contribute to an exceedance of these pollutants. Regarding manganese monitoring, see the response to comment 2-24.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
7-7	Great Lakes Indian Fish and Wildlife Commission	The NPDES permit for the headwaters of the Dark River overlooks wild rice water quality standards for Dark Lake - Dark Lake is recorded to have wild rice and is on the list of rice waters in the MPCA Wild Rice Waters database of July 19, 2016. It was also part of the MPCA's field survey of rice waters in 2013. In multiple locations on Dark Lake, MPCA found wild rice in 2013. Measurements by us and the PCA of sulfate levels above and below Dark Lake exceed the wild rice sulfate standard. The NPDES and SDS permits for the Dark River discharge must prevent exceedance of the 10 mg/L rice standard in Dark Lake.	See Item J in the "Categorical Responses to Comments"
7-8	Great Lakes Indian Fish and Wildlife Commission	The Upper Sand River and Admiral Lake are Minnesota Protected (Public) Waters and Waters of the U.S: The portion of the Sand River between the Minntac tailings basin and Little Sandy Lake is mapped as "Protected (i.e. Public) Water" by the Minnesota DNR... It is listed as originating in section 15 (T59, R18) near Co. Hwy. 568 before flowing into the Sandy Lakes. While County Hwy. 568 has been flooded out by the tailings basin for many years, the road's footprint is still visible in aerial photographs, as is the channel of this section of the Sand River (Figure 5). The section of Sand River flowing from the basin to Admiral Lake, and Admiral Lake itself, are represented as perennial water bodies on USGS topographic maps at least as far back as 1951 (Figure 7). While the very upper reaches of the Sand River were covered with tailings in the 1960s and '70s, the river downstream of the basin remains on state and federal maps of the area. The most recent Minnesota GIS data of state Protected/Public waters (https://gisdata.mn.gov/dataset/water-mn-public-waters) shows the upper Sand River as originating at the toe of the Minntac tailings basin. The latest (2016) USGS topographic map of the area continues to show the upper reaches of the Sand River and Admiral Lake as perennial water bodies (Figure 8). The map record, dating back to at least 1951 and recent maps and aerial photographs indicate that the Sand River has its origins within feet of the Minntac tailings basin, is a perennial water body and is a Minnesota Protected/Public Water. As such, water quality and water quantity in this water body must be protected from Minntac tailings basin discharges.	Monitoring was specified at the outlet of Admiral Lake (SW007) as an area that was representative of aggregate surface and groundwater inflows to the surface water near the basin. Monitoring closer to the basin lacks an easily discernible and continuous channelized flow in what is considered the Sand River in the area leading from the basin into Admiral Lake. This highlights difficulty in selecting "point of compliance" for hydrologic discharge when considering groundwater transport to be subject to NPDES permitting conditions.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
7-9	Great Lakes Indian Fish and Wildlife Commission	The system on the east side captures only approximately 43% of basin seepage into the Sand River. Calculations by the MN-PCA (MN-PCA, 2016a) indicate that less than half the seepage from the tailings basin is being captured by the SCRS in the headwaters of the Sand River. This actual capture efficiency is in line with, although less than, the earlier projections by U.S. Steel consultants of a capture efficiency of 59% for the SCRS (STS, 2007). More than 50% of the water discharging from the basin is not captured by the collection system and enters the Sand River. Given the origin of the Sand River at the toe of the Minntac tailings basin east dam and the continued discharge from the basin to the river, a NPDES permit and permits limits are needed for the discharge to the river. A weir in the Sand River between Admiral Lake and the basin or at the outlet of Admiral lake would allow for monitoring and limiting of pollutants leaving the basin.	This comment specifies that using "a weir in the Sand River between Admiral Lake and the basin or at the outlet of Admiral Lake would allow for monitoring and limiting of pollutants leaving the basin." As discussed in the response to comment 7-8, a monitoring location in the Sand River is not ideal due to the lack of channelized and continuous flow in this area. Flow is instead unchannelized and sporadic. The proposed surface water monitoring station SW007 is located at the outlet of Admiral Lake. Installation of a weir at SW007 may be difficult due to land ownership in that location. The requirement to monitor flow at this location has been removed from the permit.
8-1	Red Cliff Band of Lake Superior Chippewa	Minnesota has an existing water quality standard for sulfate levels in wild rice waters (10 mg/L), which must be enforced. This draft permit must detail where nearest water bodies with wild rice are located downstream of the Minntac Tailings Basin Area. Reissuance of the NPDES/SDS permit for Minntac NPDES/SDS Permit MN0057207 should not occur until either the existing wild rice sulfate standard has been reinstated or redefined by concurrent research.	See Item J in the "Categorical Responses to Comments"
8-2	Red Cliff Band of Lake Superior Chippewa	This draft permit is for discharges to the Dark River watershed, but not the Sand River watershed. However, there is evidence of discharges degrading resources in the Sand River watershed, as supported below. The permit draft must be modified to include all watersheds immediately downstream of the Minntac Tailings Basin Area receiving discharges.	See Item B in the "Categorical Responses to Comments"
8-3	Red Cliff Band of Lake Superior Chippewa	The proposed schedule of compliance in this draft permit does not define specific outcomes. It should define specific actions, compliance limits, completion dates, etc. As it is written, the schedule of compliance cannot be enforced in a meaningful way to protect water quality.	See Item F in the "Categorical Responses to Comments"
9-1	Iron Mining Association	Use science and recent relevant data to protect the environment and lay out the permit conditions.	The final permit relies on the available science and data to define the compliance conditions.
9-2	Iron Mining Association	Perform a Use and Attainability Analysis and establish site specific water quality standards for Minntac.	The MPCA is in the process of reviewing documentation for the use attainability analysis and site-specific water quality standards submitted by U.S. Steel.
9-3	Iron Mining Association	Finalize the revisions of Class 3 and Class 4 designations and associated water quality standards, then reissue the permit.	The MPCA has a goal to complete the Class 3 and Class 4 rulemaking in 2019.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
9-4	Iron Mining Association	Consider the cost implications if Minnesota Pollution Control Agency were to issue the current draft permit.	The Compliance Schedule in the permit provides U.S. Steel the opportunity to identify options for treatment to meet the interim and final limits. The permit does not mandate a particular treatment method.
9-5	Iron Mining Association	Mine closure requirements fall outside of the purview of the MPCA and are under the purview of the DNR, therefore those requirements should not be addressed in this permit draft.	See response to Comment 1-64.
10-1	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	We are concerned that the proposed permit is not strong enough to adequately protect surface water quality downstream of Minntac. Specifically, it lacks specificity for compliance and a reasonable calendar for reaching compliance.	See Item F in the "Categorical Responses to Comments"
10-2	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	We believe there is too much responsibility placed with the permittee to set interim and final compliance dates, and the permit allows them to set the compliance standards that they believe they can accomplish.	See Item F in the "Categorical Responses to Comments"
10-3	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	The draft permit does not mention or reference non-compliance penalties or failure-to-achieve thresholds. As an active operator, Minntac does not appear to be controlled by anything in the permit that would cause a plant shutdown.	MPCA's authority to enforce permit conditions as well as revoke or modify permits are described in applicable Minnesota Statutes and Rules. *See, e.g.* , Minn. Stat. §§ 115.071, 116.072. Key conditions are also listed in the permit chapter titled "Total Facility Requirements."
10-4	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	The present standards for sulfate are 10mg/L for the protection of wild rice, and 250 mg/L for groundwater drinking water supplies. This proposal fails to assure citizens that the discharge from Mnntac will meet these standards during this planning period, and lays out no reasonable time period for its achievement. In fact, for key downstream discharge points in the Dark (SW003 and SW008) and Sand Rivers (SW001, SW005, and SW007) the permit either lacks a monitoring standard or provides a standard that fails to meet the wild rice or groundwater drinking water standards.	See Item J in the "Categorical Responses to Comments"
10-5	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Increasing the number of monitoring stations around the perimeter of the basin would enhance our understanding what is leaking out and where it's leaking from.	The final permit includes several new monitoring locations around the basin. These will supplement existing stations to provide more complete data on groundwater movement around the basin.
10-6	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Constructing an additional catchment system around the perimeter of the leaking dikes could capture and redirect this effluent back into the basin, or deliver it to a proper treatment facility, to better protect downstream water quality.	The intent of the existing Sand River Seepage Collection and Return System (SCRS) and the proposed Dark River SCRS is consistent with the request in the comment. The compliance schedule for the Dark River SCRS requires its installation.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
10-7	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	The schedule outlined in the draft document does not establish any monitoring of ground or surface water for traces of heavy metals that might be released during processing and disposal of tailings. Although finding these types of pollutants might be considered unusual for this mineral formation, the earth is not necessarily homogenous, so periodic monitoring should be added to the Limits and Monitoring Requirements during this permit renewal period just to make sure.	The requirement to conduct a comprehensive sampling on effluent for permit reissuance is intended to address the possibility of the scenario described.
10-8	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	The use of the Investigation Work Plan seems to present an apparent conflict of interest, as the regulatory agency tasks Minntac with investigating their own shortcomings in permit compliance. Having the work done by an independent third party, hired by the MPCA and reportable to the MPCA, would provide the necessary information without the possibility of a conflict of interest.	The NPDES program is premised on the Permittee having responsibility for monitoring its operation. Permittees are responsible for reporting compliance and noncompliance. In addition, submitting plans that fail to meet the requirements defined the permit constitutes a violation of the permit.
10-9	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	As part of the Investigation Work Plan, a factor that needs consideration is the impact from changing rainfall patterns. The earth's warming atmosphere means that storms are carrying higher levels of moisture. Changes in the jet stream and tendencies for storms to stall for prolonged periods are resulting in increased storm severity, with more frequent severe rainfall events. These extreme rainfalls necessitate the development of models that can test if the containment structure is adequate for the new climatic reality.	Dam safety issues are under the purview of the DNR Dam Safety Program. *See* Minn. Stat. §§ 103G.501-561; Minn. R. 6115.0300-0520. This is not regulated by the NPDES permit.
10-10	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 1 Compliance Schedule 1.27 pg 26. The SW03 limits (pg 19) do not meet current legal limits for sulfate, either for drinking water or the wild rice standard. In fact the limit stated is over twice the safe level for drinking water, and 52 times the current limit for wild rice waters. We are concerned that MPCA has proposed these as a limits, because it casts doubt on the State's ability to adequately regulate this discharge.	See Item J in the "Categorical Responses to Comments"
10-11	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	2.5 pg. 27. States that as new information becomes available it will become incorporated into the requirements of the permit. How does the regulatory agency propose to enforce this or know if this knowledge exists if the permittee fails to report it?	There are requirements to report or provide this type of information, and civil and criminal penalties for failing to submit or submitting false information. *See, e.g.* , Minn. Stat. §§ 115.04; 115.071.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
10-12	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	2.6 pg 27. The idea of now trying to add protections to "waters to which the wild rice beneficial use applies" after these stands of rice have been decimated by decades of unregulated mining discharge seems unlikely to happen during the life of this permit. Since the proposed Limits for sulfates are far in excess of the 10 mg/L standard, it is reasonable to assume the historical stands of wild rice in waters downstream of the mine basin will never have an opportunity to recover and will eventually disappear .	See Item J in the "Categorical Responses to Comments"
10-13	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 4, 4.2 Pg 30. New Proposed De-watering of draft permit. The draft only references testing for turbidity and total suspended solids, but fails to require testing for toxins (mercury and other heavy metals) and sulfate. Shouldn't the permit include testing for all these toxic pollutants?	This language only addresses limited aspects of what were to occur if dewatering were proposed. Other actions and testing would be required as well.
10-14	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 5, 1, 1.1 pg 32. Is there a reason the seepage survey is done in October? This is a month of typically low rainfall. Shouldn't the survey be conducted during the wettest months, when the basin receives the greatest volume of precipitation and water pressure on the dikes?	The low rainfall and vegetation dieback allows for the best opportunity for visual detection of actual seepage. In wetter periods, ponding of precipitation can be confused for seepage.
10-15	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 5, 1, 1.2 pg 32. Why is there no analysis of seepage for sulfates or other possible toxins?	See Item I in the "Categorical Responses to Comments"
10-16	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 5, 1, 1.4 pg 32. Why is there no requirement to develop/implement a plan to prevent seepage, including a timeline for repairs?	See Item I in the "Categorical Responses to Comments". Repairs are not needed as there is no malfunction in the basin structure. Seepage occurs through the subsurface.
10-17	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 6, 1.3 pg 32. The permittee is given 180 days after reissuance of the permit to submit an MMP. The new MMP must be a requirement for reissuance, and is to include measurement maximums, identification of the sources of mercury effluent and their concentrations, an historical review of past cumulative mercury discharge, a summary of past implementation plans including those that are ongoing, and detailed plans that are needed today to bring the facility into compliance. Reissuance would then be contingent on submission of an acceptable new MMP. Since there is no mention of monitoring for mercury in either the groundwater or surface water discharge, shouldn't this be added to the Limits and Monitoring requirements, and incorporated into the MMP?	The permit requires mercury monitoring at SD001.
10-18	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 6, 1.3, e. pg 32. There is no stated goal for mercury reduction. This needs a measurable goal because mercury is such a potent neurotoxin and a big problem with contamination of fish.	See Item K in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
10-19	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 7 pg 33 WET - chronic Whole Effluent Toxicity. In 1.5 it gives a limit of 1.0 TUc, and if it exceeds that limit, it will be retested. But there is no follow-up of required corrective action(s) if the retests continue to exceed limits. Shouldn't the permit require corrective action that will eliminate the toxic pollutants that exceed established legal limits and prevent the ongoing contamination of the environment?	See Item M in the "Categorical Responses to Comments"
10-20	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	4. Positive Toxicity Results for WET, pg 34 4.1 . After determining a positive test for toxicity, the permittee is instructed to develop a plan to treat the cause. While there is a requirement to provide a quarterly report, there is no established deadline for fully addressing the issue. Considering the potential serious results from discharging known toxic material into the environment, establishing a reasonable deadline for fully addressing the issue seems prudent and ought to be a requirement of this permit.	See Item M in the "Categorical Responses to Comments"
10-21	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	5. There is no stated penalty for failure to submit the data in a timely and complete fashion. Since this is testing for, and regulating toxic materials, some reasonable penalty needs to be specified as part of this permit when test indicate toxic substances are being released into the environment.	See Item M in the "Categorical Responses to Comments"
10-22	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 8, pg 37, 7, 7.1. The MPCA should be immediately notified when capping is necessary to control pollutant discharge, and MPCA should authorize the source of the materials being used and their placement.	These are the standard requirements of the General Industrial Stormwater Permit for Sector G industries.
10-23	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 8, pg 38, 8. Reporting 8.2. It states that upon request the permittee is to submit information and reports "within a reasonable time". Is this weeks, one month, three months? State what is considered reasonable.	A reasonable time period would depend of the type and amount of information that is requested. For this reason, an exact timeframe is not specified.
10-24	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 9, Ground Water Stations pg 40, 1.2. Asks that the permittee identify on a USGS Topo map where well monitoring stations are located. To this there should be add a GPS point reading to more closely and accurately identify the well location.	The permit includes a topographic map with the locations of the wells.
10-25	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	1.7. In addition to the tests listed in this draft, we feel that additional ground water monitoring stations should be part of the plan and that all of the ground water stations should also test for sulfates, mercury, and other toxic heavy metals that may be leaching from the basin into the surrounding ground water. If pollutant levels exceeding established legal limits are detected, it should be the permittee's responsibility to remediate the situation by whatever means are necessary to protect public health and the environment.	See Item L in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
10-26	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	2.4. Include a GPS point for each well location in the cluster.	The exact location for the GW011 well cluster has not been determined yet. The wells will be surveyed for position and elevation after installation.
10-27	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter13, pg 43, 1. General Requirements, 1.7. Liability Exemption. At the end of the first sentence add, "unless said actions were known to the MPCA and this regulatory agency failed to take action to prevent and/or stop these actions." This statement should be added so that the agency is required to share responsibility for any inaction in responding to a known violation of this permit or of any existing or subsequent state or federal requirement.	This language is reflective of specific Minnesota Rule language, and as such, cannot be modified. The liability of the MPCA liability is limited by the Tort Claims Act and cannot be modified through a permit condition.
10-28	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	1.8 . At the end of the sentence add "but MPCA shall report any know violation(s) of these local laws, rules, or plans to the appropriate local jurisdiction.	This language is reflective of specific Minnesota Rule language, and as such, cannot be modified.
10-29	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Sampling, pg 44, 1.19. At the end of the sentence add "or as often as needed based on observed damage, suspect sampling results, or any other reason based on the judgment of the person conducting the samples."	This language is reflective of specific Minnesota Rule language, and as such, cannot be modified.
10-30	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 13, 1.23 Typo . "explination" (2X) should be "explanation".	The permit has been corrected.
10-31	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	Chapter 13. pg 47 1.31 Effluent Violations. The reporting time of "within 24 hours of the discovery" is too long for a violation that presents a human health risk. It should be orally within the hour (everyone has a cell phone these days), with the written report by the end of the following business day. The language also doesn't specify which agency(s) to notify. At a minimum the oral report should go to the Commissioners of MN Dept. of Health and the MPCA. The written report should be to these two agencies, plus the Commissioner of the MNDNR.	This language is reflective of specific Minnesota Rule language, and as such, cannot be modified.
10-32	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	1.51 Facility Closure, pg 50, 3rd para. The opening sentence regarding financial assurance says, "MPCA may require the Permittee to establish and maintain financial assurance..." when we feel it must say "shall" or "will" instead of "may".	See response to Comment 1-64. The MPCA has the authority to recover costs for required closure and postclosure care taken by the agency, but there is no requirement to recover costs or include this as a permit term.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
10-33	W.J. McCabe (Duluth) Chapter, Izaak Walton League of America	1.52 pg 51, 2nd para. To prevent the MPCA from sitting on an expired permit for years, we offer the following suggested wording after the citation of "….(Minn. R. 7001.0040 and 7001.0160)" by adding, "and the MPCA shall act upon and complete the request for reissuance within 180 days following receipt of the requests so long as none of items a. – c. below exist. And that failure to correct any of the deficiencies listed in a. – c. within 180 days after notification of these deficiencies by MPCA shall be grounds for immediate permit cancellation."	The MPCA seeks to reissue permits in a timely manner. In some cases, complications may delay reissuance. The proposed changes do not comport with existing rule and statute language relating to permitting.
11-1	Bruce and Maureen Johnson	The receiving water is mischaracterized in the permit and must be corrected to include the Dark River 2B, 3C, 4A, 4B, 5, 6; trout reach 1B,2A,3B and Sand River 2B, 3C, 4A, 4B, 5, 6.	See Item B in the "Categorical Responses to Comments"
11-2	Bruce and Maureen Johnson	p. 42. "1.2 To protect the class 3.." apparently should be "2.1. To protect…"	Numbering in the final permit has been revised.
11-3	Bruce and Maureen Johnson	The permit requires all data sources available must be used for making decisions on preparing the permit. - Use current data and all of the available data to evaluate the statistics e.g. range, maximums, minimums, standard deviation, variance etc. to understand the conditions of the TB pollution, and to conduct reasonable potential analyses. - After 29 years of Minntac holding the permit clearly there must be more data on the discharges and wells than what was used. Many of the data source documents including EPA form 2C, fact sheet, and application use data that is from the 2009 application and EPA form 2C does not indicate the date of the data provided. Old data or single analysis data promotes distrust of the data being used to avoid performing reasonable potential analyses and effluent limits.	The most current and representative data available was used in determining permit conditions.
11-4	Bruce and Maureen Johnson	Organic chemical detections - Table 2 of the permit application analyzed for priority pollutants. The results demonstrated elevated levels of some contaminants	The values listed in Table 2 of Minntac's 2011 Permit Application from the GC/MS analyses were all detection limits, not actual detections. There were no reported detections above the laboratory detection limit for any of these substances.
11-5	Bruce and Maureen Johnson	Monitor and identify reasonable potential for effluent limits on Minntac's organic pollutants. - Minntac uses many additive chemicals. The draft permit is clear (draft permit, p. 4.) that organic chemicals are used in processing. Using the draft permit data in the 24-hour 365-day/year operation, a total of 6,386,040 lbs. additive chemicals plus unknown chemicals and volumes are used (Source: draft permit. p. 4). However, the chemicals listed in the draft permit were entirely different from those listed in the permit application. The application indicated a 24/365 operation would use a total of 14,493,943 pounds/yr.	As the response to comment 11-4 noted, there have been no detections of these organic compounds. Many of the chemicals used in the process are volatilized by the high temperatures in taconite processing. The remainder are subject to significant dilution. Toxicity testing for possible effects of residual amines have not shown toxicity.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
11-6	Bruce and Maureen Johnson	Effluent Limits pages 11 thru 21 - All parameters that are limited by rule in the surface or ground water must be limited in this permit. "No Monitor Only" parameters should be allowed unless they have no numerical standard in the applicable rules.	There is not sufficient information on the subsurface routes of pollutant travel to establish limits at all locations at this time.
11-7	Bruce and Maureen Johnson	Effluent limits must be required for all parameters that are found currently or in the future to have significant potential. To date this would include, but not be limited to, specific conductivity, sulfate, bicarbonates, total suspended solids, total mercury. The MPCA can still implement compliance schedules, but these schedules must not exceed the life of the existing permit as this permit proposes. In the future if new exceedances of a standard are found, MPCA must make permit modification that places additional effluent limitations in the permit, and necessary compliance schedules not to exceed the life of the existing permit could be added.	State and Federal regulations do not require schedules of compliance to be limited to the term of the permit. One of the goals for this permit is to determine groundwater migration time, which informs when applicable water quality standards may be achieved in the future.
11-8	Bruce and Maureen Johnson	Add the following inorganic chemicals to all surface water and drinking water sites with effluent limits: Cadmium, Silver, Thallium	None of these chemicals have been detected at elevated levels in prior sampling. They are on the list of pollutants that must be analyzed for the application for permit reissuance.
11-9	Bruce and Maureen Johnson	Mass loading calculations for mercury must be added to this site and any other seepage locations identified in the future.	See Item K in the "Categorical Responses to Comments"
11-10	Bruce and Maureen Johnson	Unionized ammonia must be sampled during the warm weather at SD001 and any new seepages that are identified during this permit. Do reasonable potential for limits.	Concentrations of ammonia and nitrate species in groundwater and seeps around the basin have been at levels that do not indicate potential for exceedance of the unionized ammonia standard.
11-11	Bruce and Maureen Johnson	The permit fails to require the algae bioassay when they use WET testing. SD001 and all other WET testing in the permit must add WET testing that includes the algae, Selenastrum capapricornutum), (USEPA Method 1003.0).	See Item M in the "Categorical Responses to Comments"
11-12	Bruce and Maureen Johnson	Ch. 7, Sec1, Para1.1 - At minimum, tests must be performed in spring, summer, fall, and winter. A minimum 10 samples per seepage must be acquired.	See Item M in the "Categorical Responses to Comments"
11-13	Bruce and Maureen Johnson	Ch. 7 section 1.2: One sample of the quarterly sample each year must be during the frozen winter months (Dec, Jan, Feb.) - Low flows are predictable in winter months, since they lack dilution influences from precipitation (Lapakko, 2015). Lacking dilution, the concentration of contaminants increases. The lack of dilution water can extirpate benthic invertebrates and other organisms during the most stressful time of the year.	See Item M in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
11-14	Bruce and Maureen Johnson	Ch7, Para.1, sec.1: All newly located daylighting seepages must require WET testing. The tests must be taken. A minimum 10 of samples per seepage. - The unidentified daylighting seepages from the 8,700 acre basin that buried both the Dark River and Sand River watersheds are only partially defined. Due to the fact that internal basin water courses cannot be defined as to internal contact time, or past chemistry (beneficiation chemicals or waste minerals), the WET testing must be added in order to perform a reasonable potential analysis, and also to expedite the correction of any non-compliance.	See Item M in the "Categorical Responses to Comments"
11-15	Bruce and Maureen Johnson	Ch.7, sec. 1 para. 1: Add WET Sampling to the Dark River at SW003. - The Dark River from SD001downstream becomes a Class 1B, 2A, 3B, trout water (this appears to be left out in the heading on the first page of the permit under “receiving waters”). Known inorganic parameters from the outfall SD001 and the wastewater in the ground water is daylighting from along the Dark River estimated to be as far down river as SW003. Chronic WET testing must be added to this site to help determine synergistic effects from the tailing basin. Additionally since this area is above a trout stream it must be compared with the USEPA laboratory chronic testing data for trout bioassays, to determine if rainbow trout bioassays should be added to SD001 and SW003 measurements.	See Item M in the "Categorical Responses to Comments"
11-16	Bruce and Maureen Johnson	Ch.7.Sec 1 Para. Sec. 1.1: All WET testing results must be limited at the issuance of this permit not as a “monitor only” - Language reflecting the effluent limit to protect surface waters from toxic pollutants pursuant to Minn. Rules Ch. 7050.0217 OBJECTIVES FOR PROTECTION OF SURFACE WATERS FROM TOXIC POLLUTANTS. Subp. 2. Objectives. “Protection of the aquatic community from the toxic effects of pollutants means the protection of no less than 95 percent of all the species in any aquatic community.” Effluent limits must be applied on all surface waters in the area of Minntac to comply with this Rule. If a sample site is found to be over the limit, the test is required to re-run (Ch. 7, Sec 1, Para. 1.5) and if it remains positive, the MPCA can require a corrective action, to last for only the duration of the current permit.	See Item M in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
11-17	Bruce and Maureen Johnson	WS009, SD001. This sampling should consist of two sample per month, similar to chemical sampling, to help to define differences between seasonal fluctuations and fluctuations in tailing slurry organic constituents. - The draft permit states the tailing basin covers 8,700 acres on top the headwaters of two watersheds. It further states that underground seepages discharge into both the Dark River and Sand River, and that organic chemicals are used in large amounts and are discharged to the tailing basin (see organics comments). Thus given the sheer size of the basin covering two headwater watersheds, and the size of the seepages, four sample per year is inadequate to test for the discharge of chronic toxics (see: Appendix, Introduction Whole Effluent Testing). This sampling should consist of two sample per month, similar to chemical sampling, to help to define differences between seasonal fluctuations and fluctuations in tailing slurry organic constituents.	See Item M in the "Categorical Responses to Comments"
11-18	Bruce and Maureen Johnson	The chapter (7) must address long-term impacts on benthic invertebrate population in both the Dark and Sandy Rivers. - Whole Effluent Toxicity and Chemistry tests are not the only tests required by EPA. It has been the USEPA position for years in their guidance to the States that sufficient testing includes Benchmark testing, as well as other newly developed guidance that must be used when permitting or evaluating contamination. The US EPA NPDES Permit Writers Manual states: The control of toxic discharges to waters of the United States in an important objective of the CWA. To effectively accomplish this objective, EPA recommends an integrated approach to implementing water quality standards and developing WQBELs. This integrated approach includes three elements: a chemical-specific approach, a whole effluent toxicity (WET) approach, and a biological criteria or bioassessment approach	See Item M in the "Categorical Responses to Comments"
11-19	Bruce and Maureen Johnson	Add effluent limits (pp 13-15): Specific Conductance, 320 uS/cm, calendar month maximum, Jan-Dec, Grab 1 x Mo. Specific Conductance, 320 uS/cm, calendar month maximum, Jan-Dec, above-bottom sample, 1 x Mo. - The draft permit identifies Specific Conductivity as one parameter that exceeds the existing surface water standard of 1,000 uS/cm2 (SD001)...based on (US EPA, A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams, March 2011) and the Johnson and Johnson report.	See Item N in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
11-20	Bruce and Maureen Johnson	Chapter 10, p. 40 and Chapter 11 Surface water, p.41: Establish effluent limits for ground water (1C) and Dark River trout reach (1B) and include requirements in corresponding plans to assess private wells that may be affected by Minntac TB's contaminated ground water with a full suite of drinking water analyses to identify Manganese, Sulfate, and other potential TB pollutants such as organic pollutants and their degradates. - Manganese (Mn) and sulfate exceed drinking water MDH guidance and secondary drinking water standards, and the extent of shallow and deep ground water contamination is known to likely contribute to the Dark River for miles. The potential to affect nearby private wells is high; some are within a mile of the TB. Understanding that Mn and sulfate occur naturally in ground water, Minntac may be contributing to the exceedance of Manganese secondary standard and MDH guidance, and of sulfate secondary drinking water standard in the ground water.	U.S. Steel is being required to mitigate exceedances of groundwater standards at its property boundary. MPCA is not aware of any nearby private drinking water wells that are likely to be affected by the tailings basin discharge. MPCA has reviewed MDH well records and is not aware of any public or private drinking water wells located within one mile of the basin.
11-21	Bruce and Maureen Johnson	Ch.9, Sec. 1: The well requirements do not specify the types of casing and screen to be used (Plastic, Steel, Stainless Steel or other materials.) - This is critical for the analytical samples intended to be studied. For example, plastic wells are not recommended for organic samples. However, manganese concentrations will be affected by steel well casings. Manganese concentrations in plastic-cased wells were twice as high as those in steel-cased wells. This finding is consistent with a manganese-removal mechanism specific to steel-cased wells. (Lundy et al, Minnesota Department of Health). Therefore the type of casings and well screens must be specified so the screens and casing do not interfere will the chemicals to be analyzed.	The permit specifies that well casing and screen must conform to MN Rule 4725. Plastic casing will be specified.
11-22	Bruce and Maureen Johnson	Sample all private wells beyond the closest ring until non-detect in each, implement bottled water where applicable standards are exceeded Arrange sampling on regular basis at non-detect wells since ground water contamination is still spreading and will likely continue, even long after Minntac is closed. - Using an Earth map (examples in Figures 2 and 3) it is clear private residences surround the tailing basin, some as close as approximately 1 mile from the basin. On the west side of the basin the fact sheet states: "Insufficient … maintained access." Since MPCA is aware of the likely maximum effect of contaminated groundwater on the river 2.3 miles away, MPCA must address private wells that are in the range of one mile from the TB.	MPCA has reviewed MDH well records and is not aware of any public or private drinking water wells located within one mile of the basin.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
11-23	Bruce and Maureen Johnson	A certified hydro geologist should calculate rate and speed of plume in: Shallow Groundwater (to surface water, rivers, wells); Mid-depth (to groundwater and or wells), and; Deep GW to wells and geologic formations e.g. Biwabic Iron Formation which is a drinking water source. - Because we know there are potential human receptors within 1 mile of the basin, and the trout reach is also a drinking water class.	The Investigation Work Plan, which is part of the compliance schedule in the permit requires the permittee develop a field data collection and analysis plan sufficient to identify the significant surface and subsurface flow paths from the tailings basin to the surrounding surface waters and groundwater under existing and foreseeable hydrologic conditions at the tailings basin.
11-24	Bruce and Maureen Johnson	The existing wells to monitor the TB discharge are insufficient. - The tailing basin covers 8,700 acre (10.4 sections) on the top of the Dark River and Sand River watersheds. The perimeter is approximate 12-15 miles. Considering the unknown distribution of TB discharge and the variety of contaminant movement characteristics, the existing wells cannot be representative of the entire perimeter discharges.	See Item D in the "Categorical Responses to Comments"
11-25	Bruce and Maureen Johnson	Plans should be improved to identify the changing nature of Minntac TB discharges, the extent of Minntac contamination, and a plan must be added to address protection of drinking water and potential users of groundwater and the trout reach. - In Chapter 5. Metallic Mining, 1. Mine Tailings Basin, 1.2, p. 32, monitoring of the seeps and seepage zones of the basin is required. The monitoring is minimal and does not reflect complete and important content of the discharges. These are discharges that may or may not be different from the data of the only current surface discharge SD001 being monitored. Over time, Minntac has changed their chemicals and volumes of chemicals discharged into the basin, the geochemistry of the ore and host rock could change in the mine, the locations of the discharge pipe into the 8,700-acre basin has changed, and the slimes, fine tailings, and course tailings depositions patterns have resulted in unpredictable flows within the tailings of the basin. Seepage could go in any direction depending on the geographical location of the pond and undefined flow paths within the basin. These would be major factors accounting for part of the variation in the chemistry measured in the receiving waters, both surface and ground water. For these reasons, each different seep and seep zone should be sampled at least three times including a seasonal low flow (winter) and a seasonal high flow (spring) to identify which adjacent areas are similar enough to be represented by one sampling point, with final sampling points likely in the range of a half mile apart, over the dam perimeter of about 12-15 miles.	Section 5.29.32 of the draft permit requires investigation of basin flow paths, pollutants and potential impacts to surrounding waters. The purpose of this investigation is to better understand groundwater flow at the site.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
11-26	Bruce and Maureen Johnson	A new ground water background location in a parallel watershed should have nested wells for depth comparisons to TB ground water issues. Use the natural background as the standard for underground waters if its quality is better than drinking water standards. - "GW010 is located roughly 1200 feet east of the southeast corner of the basin and appears to be cross-gradient, but monitoring results are variable and may reflect impact from the basin."(Fact Sheet p. 18).With the depths and extent of the ground water plume unknown, and the existing background in question, it is imperative that an appropriate background location be selected.	The existing background is not in question, nor a factor in permitting, for the parameters of concern that are not known to have significant natural variability in the area.
11-27	Bruce and Maureen Johnson	Permit p. 22, c. final compliance limits for groundwater at the property boundary to protect its use as a potential drinking water source. - Redesignate final compliance points to points where the permittee can take the most efficient and cost effective action to control the discharge. Designate interim compliance points as warning stations requiring action. The concept of property line as the compliance point is unreasonable when applied to all situations. If the line is far from the discharge, control of the contaminants there is unlikely and the contaminants will continue to migrate. In all situations, the compliance boundary should be located at a distance within which the permittee can take the most efficient and cost effective action to control the discharge. In addition, designating the property boundary as the compliance limit places unreasonable controls on adjacent property owners with regard to placement of their own wells. Minn. Rules Ch. 4725.4450 WATER-SUPPLY WELL DISTANCES FROM CONTAMINATION is a Health Department rule. It appears to regulate all drinking water wells (water supply wells).	See Item L in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
11-28	Bruce and Maureen Johnson	Evaluate sediments for contamination by Minntac's TB pollutants and effects of those pollutants and take appropriate action per rules. - Reason: The permit includes no mention of sediments, but this is a concern that should be addressed, according to:.EPA's National Hardrock Mining Framework, U.S. Environmental Protection Agency Office of Water (4203),401 M Street, SW Washington, DC 20460 , September 1997. APPENDIX B POTENTIAL ENVIRONMENTAL IMPACTS OF HARDROCK Mining, Page B-9; "Dissolved pollutants discharged to surface waters can partition to sediments. Specifically, some toxic constituents (e.g., lead and mercury) associated with discharges from mining operations are often found at elevated levels in sediments, while undetected in the water column. Sediment contamination may affect human health through consumption of fish that bioaccumulate toxic pollutants. Furthermore, elevated levels of toxic pollutants in sediments can have direct acute and chronic impacts on macroinvertebrates and other aquatic life. Finally, sediment contamination provides a long-term source of pollutants through potential redissolution in the water column."	Monitoring of water at discharge locations has not shown elevated levels of pollutants that have the potential to adsorb to sediments (e.g. mercury and lead).
11-29	Bruce and Maureen Johnson	The sediments in the receiving waters streams and small lakes such as Admiral Lake must be sampled for GC/MS (peaks identified) organic beneficiation reagents, their degradates, unespected chemicals, and mercury. - Sediments can adsorb numerous organic contaminants or degradation products, for example see MSDS for Nalco 9843. Adsorption is not a permanent bonding. Some organics and inorganics can be held tightly, others are not. Changes in redox or other internal conditions, or other water chemistry can release chemicals, causing toxic releases from the sediments. One example, of this is inorganic phosphorous. Under anoxic conditions it is stored in the sediment; when a lake turns over, the bottom water is oxygenated and the phosphorus is released. One of numerous tailing basin chemicals is the Frother -Nalco 9843 used at a rate of 884,760 lbs./year; the MSDS states it adheres to soils and sediments, its degradation products are unknown, whether they bioaccumulate, whether these products concentrate in sediments. The draft permit does not and must address these chemicals in the sediment. Since mercury in the sediments is not permanently bonded, the permit must include studies comparing background sediments with sediments potentially contaminated by tailing basin effluent.	The present understanding of tailings basin chemistry indicates that the fine tails within the basin adsorb most of these substances. Whole effluent toxicity (WET) testing is included in the draft permit. The type of studies proposed in this comment are more typical of what may be done as part of the Toxicity Identification and Reduction Evaluation (TIE/TRE) process that may occur after WET testing has indicated that the effluent is toxic to test organisms.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
12-1	NTS Environmental Science & Engineering	The ecological impacts of receiving waters around the tailings basin should be more stringently understood, perhaps though a Tiered Aquatic Life approach. Similarly, a use attainability study should be conducted to establish site specific water quality standards. The permit should allow for an interim period to accomplish this.	Biological studies and whole effluent toxicity tests are currently being conducted by the Permittee in conjunction with the use attainability analysis application.
12-2	NTS Environmental Science & Engineering	Class 3 (industrial consumption) and Class 4 (agricultural and wildlife) designations and their water quality standards misapply the water use around the tailings basin resulting in a risk estimation that is artificially high. The MPCA needs to complete the revision for these standards prior to using them in this permit.	Permits must comply with existing water quality standards.
12-3	NTS Environmental Science & Engineering	This draft permit has additional sampling locations in remote areas with difficult access. The MPCA needs to address how existing wells and surface water sample points can be used for permit conditions instead of adding unnecessary cost and safe access concerns.	All sampling locations were chosen with consideration of historic access capability. It is the permittee's responsibility to establish safe access.
12-4	NTS Environmental Science & Engineering	Mine closure requirements are regulated by the DNR and do not belong in an NPDES permit.	See Response to Comment 1-64.
12-5	NTS Environmental Science & Engineering	Financial assurance is part of the permit to mine, the CWA does not provide a basis for financial assurance in an NPDES permit.	See Response to Comment 1-64.
13-1	Short Elliott Hendrickson Inc.	SDS Compliance Schedule -Deep Seepage Investigation and Compliance Plan (Page 36 of the fact sheet; and paragraphs 1.6 through 1.21 of the draft permit). Modify the compliance schedule to allow for: At a minimum, 180 days for Investigation Work Plan development; 13 months for completion of the Basin Treatment Methods Study to begin following completion of the Investigation Work Plan; and; 13 months for completion of the Deep Seepage Final Compliance Plan to begin following completion of the Basin Treatment Methods Study. - As described in the draft permit and fact sheet, there are four sequential activities leading to compliance with water quality limits in waters downstream of the Minntac basin. Our comments specifically relate to the reasonableness of the compliance schedule. Based on our professional experiences in providing permit compliance assistance on other wastewater permits in Minnesota, we believe there is not sufficient time allowed for each of the activities identified in the compliance schedule (see specific comments below).	The compliance schedule timeline has been modified. Specifically, the requirement to submit the Investigation Work Plan has been extended as suggested (180 days), the Investigation Work Plan Final Report is due one year later (18 months), and time was added to allow development of the Basin Treatment Methods Study Plan (20 months). Other components were adjusted based on those deadlines, including the Final Compliance Plan (30 months), Final Design Package (48 months), and initiation of construction or implementation of mitigation (54 months).

Comment Number	Commenter Name	Summary of Comment	MPCA Response
13-2	Short Elliott Hendrickson Inc.	Modify the compliance schedule to allow for: At a minimum, 180 days for Investigation Work Plan development; The 30-day milestone for the work plan submittal is not a reasonable requirement considering the complexity of requirements for this work plan listed in sections 1.7 – 1.8 of the draft permit, and the importance of this work plan in providing the foundation for future decisions. We recommend a minimum of 180 days to allow for development of and approval for the work plan. The Investigation that proceeds from this work plan will have seasonal considerations warranting at least 13 months after MPCA approval of work plan.	See Response to Comment 13-1
13-3	Short Elliott Hendrickson Inc.	Modify the compliance schedule to allow for 13 months for completion of the Basin Treatment Methods Study to begin following completion of the Investigation Work Plan; This study timeline overlaps with the Investigation Work Plan. In order to identify the appropriate treatment technologies, the proper treatment level must be identified. Therefore, this plan should be initiated after the "Investigation Work Plan" is complete. We recommend that the Basin Treatment Methods Study Plan due date be at a minimum 13 months after MPCA accepts the results of the "Investigation Work Plan".	See Response to Comment 13-1
13-4	Short Elliott Hendrickson Inc.	Modify the compliance schedule to allow for 13 months for completion of the Deep Seepage Final Compliance Plan to begin following completion of the Basin Treatment Methods Study. Because the detailed design must meet specific limits identified in previous compliance activities, we recommend that the "Deep Seepage Final Compliance Plan" be due 13 months after MPCA accepts the Basin Treatment Methods Study Plan.	See Response to Comment 13-1
13-5	Short Elliott Hendrickson Inc.	There is no requirement that the MPCA approve or accept the findings prior to initiating the next step in the progression. Because water quality limits are being identified in this research, it is necessary for the MPCA to approve of the work plan and that this happen before proceeding to the next activity.	If a change to a water quality limit is approved, the permit will need to be modified, which would constitute approval by MPCA.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
14-1	Superior National Forest, U.S. Forest Service	There are numerous reports, studies, and proposed action plans (Investigation Work Plan, Basin Treatment Methods Study Plan, Plan of Action, Final Compliance Plan, Dam Seepage Survey Report, Dark River Seepage Collection and Return System, and Mercury Pollutant Minimization Plan (MMP), etc). The SNF would like to be sent copies of these plans and reports by the MPCA when they become available. The design and implementation of these actions may directly or indirectly impact SNF lands. Hence, the SNF would like the opportunity to review these documents and offer comments prior to their formal approval by the MPCA.	Comment noted.
14-2	Superior National Forest, U.S. Forest Service	It is unclear how actions derived from the permit(s) will impact the flow magnitude and timing of discharge to the Dark River and Sand River. How will the actions integrate the Minnesota Department of Natural Resources Appropriations Permit and as noted above, how will downstream property owners be notified and informed about the proposed changes to flow and loading to downstream resources established in forthcoming plans and implementation with opportunities to offer comment?	See Item C in the "Categorical Responses to Comments"
14-3	Superior National Forest, U.S. Forest Service	It is unclear when the attainment of water quality standards will be met and the language used (such as in the shortest reasonable time) may be considered unenforceable as the definition of 'reasonable' is open for markedly different interpretation.	See Item G in the "Categorical Responses to Comments"
14-4	Superior National Forest, U.S. Forest Service	Well GW-0014 appears to be the only installation to consider groundwater flow to the north (through SNF lands and eventually to Sand Lake) as shown in Figure 3 below (adapted from the MPCA draft permit application) and Figure 2 above. The construct of this well to evaluate flow to the north is unknown and consideration should be given to additional monitoring of potential northerly flow.	See Item L in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
14-5	Superior National Forest, U.S. Forest Service	It is noted in the draft permit that "1.3 The MPCA recognizes that basin-impacted groundwater is currently reaching surface waters and having an impact on those surface waters." However, it is unclear if this recognized contribution to surface waters will be regulated by the MPCA. The effect of elevated sulfate concentrations within the groundwater may extend beyond the property limits as they become mixed with surficial systems and the standards applied may deserve more scrutiny. Has the MPCA performed an evaluation of the potential impacts of elevated groundwater sulfate concentrations on downstream surficial resources beyond the property boundaries to justify the proposed standards at the property limits?	See Item H in the "Categorical Responses to Comments"
15-1	U.S. Department of the Interior, Voyageurs National Park	The lakes of Voyageurs and the BWCA have been designated by the State of Minnesota as Outstanding Resource Value Waters. Subpart 9 of Statute 7050.0180 (Nondegradation for Outstanding Resource Value Waters) addresses impacts from upstream discharges: Subpart 9 (Impacts from upstream discharges) states that "(t)he agency shall require new or expanded discharges to waters that flow into outstanding resource value waters be controlled so as to assure no deterioration in the quality of the downstream outstanding resource value water."	The operations at the Minntac Tailings Basin are not changing and therefore are not considered to be a "new or expanded discharge." The permit does not authorize an increase in loading.
15-2	U.S. Department of the Interior, Voyageurs National Park	The lakes of Voyageurs National Park are 303d listed by the U.S. EPA for mercury impairment. Sulfate, one of the principal contaminants in the tailings pond water which would be released through the proposed permit, is important in the conversion of mercury to toxic and biologically-available methylmercury and is, at times, the limiting factor in that conversion. Thus, increased sulfate in the tributaries and waters leading to Voyageurs National Park could result in increased methylmercury concentrations in park lakes, which would exacerbate the current mercury impairment of these waters.	See Item K in the "Categorical Responses to Comments"
15-3	U.S. Department of the Interior, Voyageurs National Park	The purpose of the additional evaluation in the NPDES permit is to identify feasible technologies to reduce the concentration of sulfate within the tailings basin to 800 mg/L within five years of permit issuance, and 357 mg/L within ten years from permit issuance, or in the shortest reasonable period of time. Sulfate targets should be lowered, as possible, to correspond with wild rice standards in review by MPCA.	See Item E in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
15-4	U.S. Department of the Interior, Voyageurs National Park	The potential impacts of a discharge from the Minntac tailings pond should be considered along with the potential impacts of other mining activities in the waters that drain toward Voyageurs NP. Contaminants originating from mining within the Rainy Lake and Namakan watersheds may flow through Voyageurs (Meyers, 2014/Rev. 2015) and cumulative impacts within the affected watershed need to be considered.	Cumulative effects are addressed by the watershed management process, whereby an impairment is identified and a TMDL is established for the pollutant(s) causing the impairment. There are currently no TMDLs in the watersheds referenced for pollutants related to mining activities.
16-1	Voyageurs National Park Association	The lakes of Voyageurs National Park are 303d listed by the U.S. EPA for mercury impairment. Sulfate, one of the principal contaminants in the tailings pond water which would be released through the proposed permit, is important in the conversion of mercury to toxic and biologically available methylmercury and is, at times, the limiting factor in that conversion. Thus, increased sulfate in the tributaries and waters leading to Voyageurs National Park could result in increased methylmercury concentrations in park lakes, which would exacerbate the current mercury impairment of these waters.	See Item K in the "Categorical Responses to Comments"
16-2	Voyageurs National Park Association	The purpose of the additional evaluation in the NPDES permit is to identify feasible technologies to reduce the concentration of sulfate with in the tailings basin to 800 mg/L within five years of permit issuance, and 357 mg/L within ten years from permit issuance, or in the shortest reasonable period of time. Sulfate targets should be lowered, as possible, to correspond with wild rice standards in review by MPCA.	See Item E in the "Categorical Responses to Comments"
16-3	Voyageurs National Park Association	The potential impacts of a discharge from the Minntac tailings pond should be considered along with the potential impacts of other mining activities in the waters that drain toward Voyageurs National Park. Contaminants originating from mining within the Rainy Lake and Namakan watersheds may flow through Voyageurs (Meyers, 20 14/Rev. 2015) and cumulative impacts within the affected watershed need to be considered.	See Response to Comment 15-4.
16-4	Voyageurs National Park Association	VNPA supports the National Park Service's recommendation to develop a current NPDES/SDS permit for the U.S. Steel Minntac facility. We believe this would be an effective tool for water quality improvement at the facility if the permit adheres to strict targets and definitive timeline for bringing discharge waters into compliance with all applicable standards for receiving waters.	Comment noted.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
16-5	Voyageurs National Park Association	Please require the Permittee to conduct and publish an engineering study of the risk of a major breach in the basin walls and dams considering the increased probability of severe precipitation events due to climate change and the age of the basin construction.	The Basin integrity is managed under the MN DNR's Dam Safety program.
16-6	Voyageurs National Park Association	In addition, require the Permittee to conduct an annual inspection on the integrity of the basin.	The Basin integrity is managed under the MN DNR's Dam Safety program, under which annual dam inspections are performed by the Permittee.
16-7	Voyageurs National Park Association	Please include in the permit a simplified version of the Limits and Monitoring Table on page 11 of the draft. We suggest selecting a few key monitoring points for both surface and groundwater with columns for the parameter, its limits, effective date, and applicable limits based on Federal and State Standards. We realize that the site and its monitoring are very complex, but such a table would contribute to transparency in the process and better public understanding.	The public notice of the Minntac Tailings Basin draft permit included both a detailed Fact Sheet and a Summary Fact Sheet, each of which contained simplified summaries of the monitoring required in the draft permit. Both these documents are available on the MPCA website at https://www.pca.state.mn.us/quick-links/mining
16-8	Voyageurs National Park Association	To further increase public awareness and project transparency, please develop a public website, produced either by MPCA or the Permittee, to present current and historical water quality data in waters downstream of the basin. Include a few key water quality parameters including sulfate.	The public notice of the Minntac Tailings Basin draft permit included both a detailed Fact Sheet and a Summary Fact Sheet, each of which contained simplified summaries of the monitoring required in the draft permit. Both these documents are available on the MPCA website at https://www.pca.state.mn.us/quick-links/mining. Water quality data is available on the MPCA's website at https://www.pca.state.mn.us/quick-links/eda-surface-water-data.
17-1	Form Letter delivered by U.S. Steel. List of signatories in Attachment A	I support reissuance of the permit.	While MPCA has considered the submitted comment, it does not contain specific permit references or supporting reasoning.
17-2	Form Letter delivered by U.S. Steel. List of signatories in Attachment A	I support appropriate permit conditions to protect the environment that are based on science and use recent and relevant data.	MPCA considered the comment; however, no changes were made to the permit.
17-3	Form Letter delivered by U.S. Steel. List of signatories in Attachment A	I ask that the MPCA act upon U.S. Steel requests to perform a Use Attainability Analysis and establish site specific water quality standards for Minntac, requests that were submitted by U.S. Steel in 2014 and 2015, respectively.	While MPCA has considered the submitted comment, it does not contain specific permit references or supporting reasoning. Changes to water quality standards are beyond the scope of the permit reissuance.

Comment Number	Commenter Name	Summary of Comment	MPCA Response
17-4	Form Letter delivered by U.S. Steel. List of signatories in Attachment A	I urge the MPCA to finalize the permit only after the MPCA has completed the revision of Class 3 (industrial consumption) and Class 4 (agricultural and wildlife) designations and associated water quality standards. The MPCA has been working on that revision since 2008 and it should be completed before the permit is issued.	State and federal regulations do not provide for delaying permit issuance in anticipation of possible water quality standard or use revisions. Adoption of a revised standard is justification for MPCA to modify the permit. Minn. R. 7001.0170(C). In addition, MPCA is not imposing limits in the surface waters surrounding the facility in the final permit. As a result, there will not be compliance limits to modify on the west and east side of the basin in response to potential rulemaking.
17-5	Form Letter delivered by U.S. Steel. List of signatories in Attachment A	I do not support the overly burdensome and costly permit conditions that are not required to ensure compliance, particularly those with safe access concerns.	This comment does not reference specific permit conditions to which MPCA can provide a response. However, MPCA would note that the Permittee had the capability to build a large industrial operation in what was once wilderness, but now claims it lacks the ability to conduct monitoring in this same area.
17-6	Form Letter delivered by U.S. Steel. List of signatories in Attachment A	I do not support the inclusion of mine closure requirements in this permit. The Minnesota Department of Natural Resources is responsible for permitting mine closures.	State law assigns closure and postclosure care of facilities to the facility owner. The MPCA may take actions required for closure or postclosure care if the owner fails to do so, but the owner or operator is liable for the costs incurred. Minn. Stat. § 116.07 subd. 4f.
18-1	Form Letter as suggested by Water Legacy. List of signatories in Attachment B.	The draft permit fails to require compliance with Minnesota's sulfate limit of 10 parts per million in wild rice waters either to the east or to the west and would fail to protect wild rice as required by Minnesota rules. Minntac tailings seepage has already decimated wild rice in the Sand River and Sandy and Little Sandy Lakes.	See Item J in the "Categorical Responses to Comments"
18-2	Form Letter as suggested by Water Legacy. List of signatories in Attachment B.	The draft permit doesn't protect fish and aquatic life from high levels of salts and ions that are toxic to the aquatic food chain.	See Item N in the "Categorical Responses to Comments"
18-3	Form Letter as suggested by Water Legacy. List of signatories in Attachment B.	The draft permit doesn't limit manganese in groundwater or surface drinking water to the levels set by the U.S. Environmental Protection Agency or to the limits set by Minnesota Health Department to protect infants and children from brain damage.	See response to comment 2-24
18-4	Form Letter as suggested by Water Legacy. List of signatories in Attachment B.	The draft permit would allow high levels of sulfate to flow downstream, increasing levels of toxic methylmercury in fish in waters that are already impaired due to high mercury, such as the Sturgeon River, Little Fork River, Rainy River and Lake of the Woods.	See Item K in the "Categorical Responses to Comments"

Comment Number	Commenter Name	Summary of Comment	MPCA Response
18-5	Form Letter as suggested by Water Legacy. List of signatories in Attachment B.	The draft permit tries to evade the federal Clean Water Act by claiming that pollution collected in the basin and discharged to streams, rivers, lakes and wetlands through connected groundwater doesn't really count as surface water pollution, even though state scientists have proved that the pollution comes from the Minntac Tailings Basin.	See Item A in the "Categorical Responses to Comments"

Categorical Responses to Comments

A. NPDES Authorization for Discharge to Groundwater

Summary of Comments:
The Minnesota Pollution Control Agency (MPCA) must regulate point source discharges to surface waters through hydrologically-connected groundwater according to water quality standards promulgated and approved pursuant to the Clean Water Act (CWA).

MPCA Response:
The MPCA notes that the law governing where the CWA applies is not settled, both as a result of judicial actions and administrative actions. But more importantly, the MPCA does not believe that resolution of this issue is material to this permit. The MPCA proposes to regulate the discharges to groundwater that are affecting surface water under state law, with the goal of returning those surface waters to compliance with applicable water quality standards. The MPCA proposes to do this by reducing pollutant levels in the water being discharged into the basin, because it is not possible to control pollutants that are leaving the basin and entering groundwater through traditional effluent limits that might be applied to a point source discharge. Imposing effluent limits under the CWA will not change the controls that are necessary to reduce pollutant levels in the groundwater.

Under state statute, the Minntac tailings basin meets the definition of a disposal system. Minn. Stat. § 115.01 subd. 5 ("'Disposal system' means a system for disposing of sewage, industrial waste and other wastes, and includes sewer systems and treatment works.") Specifically, the Minntac tailings basin is a disposal system for taconite tailings. It does not meet the definition of a point source under the Clean Water Act (CWA). 33 U.S.C. § 1362(14) ("'point source' means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged...."). The means by which the pollutants escape the disposal system is not currently discernible, confined, nor discrete.

The MPCA does not concede that the tailings basin is a container as asserted in comments made by MCEA. Although "container" is not defined under the CWA, it is defined for purposes of the Resource Conservation and Recovery Act as "any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled." 40 C.F.R. § 260.10. The tailings basin clearly is not portable and is therefore not a container according to the hazardous waste definition. Nor does the tailing basin meet the common dictionary definition of a "container," which Merriam Webster defines as "a receptacle (such as a box or jar) for holding goods." This definition does not reasonably include an 8700 acre unlined impoundment. Whether the tailings basin fits the definition of a container is a legal issue, not a factual issue.

The NPDES program was designed to control pollutants entering water bodies principally from pipes and ditches, which are discernible sources of pollutants with a flow volume and concentration that can be measured, and which almost always originate from a facility under direct and immediate human control. The pollutant load to waters from point sources can be quantified and limited. Point source operators can meter the flow, temporarily stop it, divert it to another water body, and, if needed, terminate operations at the facility to permanently cease the discharge. In addition to flow management, pollutant concentrations from a point source can be adjusted using engineered and other controls on time scales from immediate (e.g. automated pH adjustment) to months or years (construction of new treatment systems).

The regulations, policy, and technical guidance developed under the CWA for the NPDES permitting program are tailored to pipe-type discharges that occur to Waters of the United States, which are, without exception, surface waters. Methods to calculate effects on receiving waters, implementation of WQBELs, toxicity testing procedures, mixing

calculations, and even the terms and conditions required to return dischargers to compliance using compliance schedules were designed to apply to discharges from discrete, measurable point sources. These all rely on the ability to assess the pollutant load that is present in a point source – a "discernible, confined, and discrete conveyance" (33 U.S.C. § 1362(14)) – to calculate the impact as it enters a surface water body at a known location, and being able to exert engineered and other controls over the discharge. A conveyance is something "that systematically act[s] as a means of conveying pollutants from an industrial source to navigable waterways," *United States v. Plaza Health Labs., Inc.*, 3 F.3d 643, 646 (2d Cir. 1993). The ground itself and groundwater are not point sources; they are not confined like a pipe. As a result, "[g]roundwater seepage that travels through fractured rock would be nonpoint source pollution, which is not subject to NPDES permitting." *Sierra Club v. El Paso Gold Mines, Inc.*, 421 F.3d 1133, 1140 n.4 (10th Cir. 2005). The Clean Water Act itself distinguished between Waters of the United States and groundwater, and the NPDES program did not include groundwater. It only includes additions of pollutants to navigable waters from discernible, confined, and discrete conveyances.

In contrast to a pipe-type discharge, at the Minntac tailings basin pollutants can, and likely do, leak out the bottom of the entirety of the basin into the ground at unknown rates and travel an undefined path through tailings and natural soils. The only known feasible method to control pollutants leaking from the basin is perimeter seepage collection/cutoff systems. Even if plant operations ceased, pollutants would continue to leak from the basin at significant concentrations for decades. There is no way to "turn off" the discharge to groundwater from the basin.

The pollutants leaving the basin originate not only from the recirculated process water but also from the interactions between all the water throughout the basin complex (process and meteoric water) that is exposed to the tailings. Additionally, none of the principal pollutants emitted from the basin (sulfate, bicarbonate, magnesium, and calcium) are conservative. They all participate in chemical and biogeochemical reactions that can change their form and mobility, and hence their concentration, as they move with groundwater. In this complex hydrologic setting, there is no obvious or effective point at which to establish compliance limits for a "discharge" which further illustrates that this is not a "point source discharge." The only place to establish whether pollutants from the tailings basin are causing or contributing to an exceedance of a surface water quality standard is in the surface water body itself. For this reason MPCA is using its authority under Minn. R. chs. 7050 and 7053 to limit and reduce the impact of the Minntac Tailings Basin disposal system on surface waters.

EPA has taken varying positions on these issues, as cited in several comments by environmental organizations. Significantly, EPA wrote the following in the 1982 Preamble to the publication of the Ore Mining and Dressing Point Source Category; Effluent Limitations Guidelines and New Source Performance Standards in the Federal Register. "Moreover, the Agency does not propose to regulate seepage from impoundments at ore mines and mills other than those extracting uranium. The extent to which such seepage adversely affects navigable waters (as opposed to groundwater) is highly problematic. Frequently, even when seepage reaches navigable waters, it does not constitute a point source discharge-a "discernible, confined and discrete conveyance"-and is therefore not subject to effluent limitations. In such cases, BMP's might be imposed under section 304(e) of the Act (see Section XII of this preamble). However, section 304(e) of the Act authorizes the promulgation of BMP's only when the Administrator finds them necessary to prevent "significant amounts" of toxic pollutants from reaching navigable waters on a national scale. At this time, the Agency does not possess information indicating that seepage from non-uranium tailings impoundments or lagoons contributes significant amounts of toxic pollutants to the navigable waters on a national scale. For these reasons, the Agency does not propose at this time to establish national regulations covering seepage from settling ponds and tailings impoundments in this industry. Of course, permit writing authorities retain the authority under section 402(a)(1) of the Act to require control of seepage when necessary on a case-by-case basis."

Most recently, EPA requested comment on the scope of the NPDES permitting program with respect to groundwater hydrologically connected to surface water. *Clean Water Act Coverage of "Discharges of Pollutants" via a Direct*

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Hydrologic Connection to Surface Water, 83 Fed. Reg. 7126 (Feb. 20, 2018). EPA sought comments because it is considering whether to take action to clarify its position. The request noted that EPA's past positions were not clearly articulated, and noted that EPA had "made these statements in previous rulemaking, permitting, and guidance documents, although most of these statements were collateral to the central focus of a rulemaking or adjudication." *Id.* at 7127. The request for comments demonstrates, at a minimum, that the Clean Water Act does not clearly require NPDES permits for discharges to groundwater such as those at issue in this permit.

B. Listed Receiving Waters

Summary of Comments:
The draft permit only lists the Dark River as a receiving water. All surface waters being impacted by pollutants from the basin, either via surface flow or groundwater must be listed as receiving waters, including Timber Creek, Sand River, Twin Lakes, Admiral Lake and surrounding wetlands or this would constitute a discharge of pollutants to surface waters in the absence of NPDES permit coverage.

MPCA Response:
As described above regarding the issue of whether groundwater seepage constitutes a discharge under the CWA, the MPCA notes that the law governing the scope of the CWA is not settled, both as a result of judicial actions and administrative actions. The MPCA proposes to regulate the discharges to groundwater that are affecting surface water under state law, with the goal of returning those surface waters to compliance with applicable water quality standards.

NPDES/SDS permits issued by MPCA list as receiving waters only those "Waters of the United States" that are either directly receiving a discharge of pollutants from a point source as defined under the CWA, or that are downstream of the initial receiving water and have more stringent standards than the immediate receiving water. EPA Form 2C, Application for Permit to Discharge Wastewater, requires the applicant to identify all outfalls (point sources) at the facility and their respective receiving waters. There is not an explicit federal or state requirement to list receiving waters in a final permit. The EPA Form 2C submitted by U.S. Steel in June 2014 (at MPCA's request) listed the SD001 discharge point on the west side of the basin as the only outfall and the Dark River as the receiving water.

MPCA is aware that there are multiple seeps along the west and northwest perimeter of the basin that appear to contribute flow to the Dark River and Timber Creek, often via wetlands. MPCA has revised the permit to include as receiving waters the Class 1B, 2A, and 3B trout reach portion of the Dark River, unnamed wetlands tributary to the Dark River and Timber Creek, unnamed wetlands to the north of the basin, and Timber Creek. Further, the revised permit requires annual surveys of the basin perimeter to locate and assess for the presence of seepage. If seepage is discovered during the annual seepage survey, that flows to any water not listed as a receiving water in the permit, U.S. Steel must take measures to prevent the seepage from entering those waters or seek modification of the permit to authorize the discharge under the permit. Based on U.S. Steel statements on the performance of the seepage collection and return system installed on the east side of the basin, and consistent with the reasoning outlined in the previous paragraph the final permit does not include the Sand River and its associated lakes as receiving waters since there is not believed to be a point source discharge there.

C. Dark River Seepage Collection and Return System

Summary of Comments:
Comments question the efficacy of and need for the Dark River Seepage Collection and Return System. Concerns are also raised about impacts to the wetlands.

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MPCA Response:
The existing seepage collection and return system on the east side of the basin (Sand River SCRS) and the proposed system on the west side of the basin (Dark River SCRS) were and are supported by MPCA as means to provide rapid reduction in pollutants entering the Sand River and its associated lakes, the Dark River, Timber Creek, and the surrounding wetlands. Of all the seepage that leaves the basin and eventually migrates to surface waters, the seeps that emerge near the toe of the basin dam are most likely to have spent the least amount of time in the subsurface, where natural attenuation may occur, and have had the least opportunity to mix with natural recharge water. Therefore, these waters are likely to have some of the highest concentrations of dissolved solids, particularly sulfate. Collection and pump back of this seepage is appropriate because it occurs in an area where it is easily collectible and will remove an estimated 30 to 50 percent of the average sulfate mass currently entering the Dark River. MPCA does not believe that either system is a complete solution to meeting all current water quality standards in surface waters downstream of the basin. Even if all surface flowage from the basin is intercepted by these systems, impacts to surface water and groundwater will be addressed through other permit conditions.

The same set of water quality standards apply to surface waters regardless of the form of discharge and permit coverage. See Minn. R. 7050. MPCA is not attempting to treat discharges to surface water and groundwater differently. Nor is MPCA applying different water quality standards based on the form of discharge. However, there are inherent differences that exist in being able to establish representative compliance points between surface water and sub-surface ground water.

MPCA disagrees with certain comments EPA made to the Army Corps of Engineers on the Section 404 Application for the Dark River SCRS. EPA expressed concern about the potential effects on wetlands surrounding the basin. The wetlands EPA identified are already significantly altered from their condition prior to construction of the basin, both hydrologically and geochemically. Air photos from the 1940s show that the area during this time was considerably drier, with several farm fields in locations that are now year-long standing water and former roadways that are now impassable due to wet soils. To the extent that the SCRS may alter the local hydrology, it would be to restore the water table to a level closer to the original conditions at the site. Any Section 404 permit from the Army Corps of Engineers for wetland losses would require appropriate avoidance, minimization, and mitigation. *See* 40 C.F.R. § 230.91(c). The MPCA has already issued a Section 401 certification for the installation of the Dark River SCRS. U.S. Steel received a Wetland Conservation Act permit from the Minnesota DNR in 2016, which includes wetland monitoring requirements.

EPA also raised concern that wetlands between the dam and the SCRS will experience greater concentrations of pollutants. MPCA does not see a mechanism where this would change significantly from current conditions. Based on concentrations of conservative pollutants, surface water and groundwater in this area is derived almost completely from upwelling basin water with occasional inputs of rainwater and snow melt from the immediate area. Because the basin sits at the original headwaters of multiple rivers, and remains higher than the surrounding landscape, all surface and groundwater flow is away from the basin in this area. There is no inflow from adjacent wetlands, which could have potentially diluted the pollutant concentrations in the near-basin areas. The water being collected and returned to the basin would be heavily basin-influenced, with higher concentrations of pollutants than other sources of water to the wetlands (i.e., precipitation). The wetlands outside of the SCRS perimeter should expect significant improvement in water quality, as meteoric inputs will be unchanged while the surface input of pollutants will be greatly reduced.

Potential impacts to flow in the Dark River were considered during early stages of the project. U.S. Steel conducted monitoring for flow and chemistry at two locations in the Dark River to establish a pre-project baseline. Monitoring will resume once the Dark SCRS is operational to determine if flow augmentation is needed. Initial analysis by MPCA and DNR found that the need for augmentation is unlikely, but potential augmentation sources were evaluated nonetheless. A report from several decades ago by a DNR hydrologist found that in general, the construction of the tailings basin over the headwaters of the Sand and Dark Rivers would tend to moderate the variability in flow volume and temperature in

both streams due to increased infiltration and groundwater recharge by water that would previously have quickly entered the streams as runoff.

D. Groundwater Compliance at Property Boundary

Summary of Comments:
Compliance with groundwater standards should occur closer to the basin, not just at the U.S. Steel Minntac property boundary. Redesignate final compliance points to points where the permittee can take the most efficient and cost effective action to control the discharge. Designate interim compliance points as warning stations requiring action. The concept of property line as the compliance point is unreasonable when applied to all situations. If the line is far from the discharge, control of the contaminants there is unlikely and the contaminants will continue to migrate. In all situations, the compliance boundary should be located at a distance within which the permittee can take the most efficient and cost effective action to control the discharge. In addition, designating the property boundary as the compliance limit places unreasonable controls on adjacent property owners with regard to placement of their own wells. Minn. Rules Ch. 4725.4450 WATER-SUPPLY WELL DISTANCES FROM CONTAMINATION is a Health Department rule. It appears to regulate all drinking water wells (water supply wells).

MPCA Response:
Monitoring by U.S Steel has shown groundwater directly adjacent to the basin has variable sulfate concentrations ranging from roughly 50% to 100% of the basin pool concentration. Although studies at the facility suggest that concentrations decrease with distance from the basin, two wells roughly 400 feet distant from the basin and adjacent to a facility property boundary, exceed groundwater standards for sulfate and TDS.

State rule requires samples to be collected in "such type, number, and frequency as may be considered satisfactory by the agency from the viewpoint of adequately reflecting the condition of the underground water." Minn. R. 7060.0800. As provided in Minnesota Rule 7060.0800, the MPCA has the authority to determine the compliance point for groundwater standards. Additionally, the most stringent water supply well isolation distance is found in Minn. R. 4725.4450, subp. 2(A), which specifies a minimum 600 foot isolation distance between a sensitive water-supply well and an industrial wastewater rapid infiltration basin. MPCA is not aware of any drinking water wells located less than this distance from the U.S. Steel facility property boundary or the tailings basin itself.

Historically, the MPCA has used the property boundary as the groundwater compliance point for a facility to prevent impacts to groundwater users outside the facility. This approach is reasonable where the property boundary is close to the edge of the facility (e.g. the north-central to east-central basin facility perimeter). In contrast, the west property boundary of the Minntac site is more than two miles from the basin perimeter dam. Allowing all of that area to be affected could result in widespread groundwater pollution. However, there are surface water features (wetlands and streams) near the basin perimeter and within the property boundary; that are likely limiting groundwater migration by acting as a local sink, creating a partial or complete groundwater divide. Monitoring within these streams will provide information on the state of the adjacent groundwater on a broad scale, as compared to the very localized data that is provided by a monitoring well. MPCA feels that this monitoring is suitable for the conditions on the west side of the Minntac basin, and will be protective of the groundwater in the large area between Timber Creek and the west property boundary. To further assess this, the permit includes additional schedule of compliance requirements to specifically address investigation and assessment of groundwater-surface water interactions and areas of potential significant groundwater flowpaths.

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E. Basin Sulfate Limit

Summary of comments:
The limit for sulfate within the tailings basin pond water should be lowered to meet the existing wild rice 10 mg/L sulfate standard in the Twin Lakes.

Another commenter argued that a compliance schedule is inappropriate because the limit is arbitrary and the tailings basin is not a water of the state, so no limit should apply. (See comment 1-19 for details and MPCA's response)

MPCA Response:
The need to reduce the amount of sulfate leaving the facility is clear. Monitoring data show that groundwater adjacent to the basin exceeds water quality standards and surface water surrounding the basin is also being affected.

Comments correctly identify that the MPCA has a duty to issue permits that protect water quality by imposing limits on disposal systems. Minn. Stat. § 115.03, subd. 1(e). The regulations defining what data the agency must consider in determining whether a particular source has the reasonable potential to cause an exceedance of a water quality standard is ambiguous and subject to agency interpretation. *Minn. Center for Env. Advoc. v. City of Winsted*, at 890 N.W.2d 153, 158 (Minn. Ct. App 2017). The agency must use its expertise to determine what information is needed to determine whether a facility has reasonable potential and to develop the effluent limit. In this case, the legal basis for imposing water quality-based effluent limits to protect wild rice, as requested in the comments, is complicated by the legal uncertainties surrounding groundwater that affects surface water described in Item A, the limited information available to evaluate groundwater movement, and the applicability of the wild rice water quality standard as described in Item J. The MPCA has considered how to address groundwater affecting surface water (which may subsequently affect wild rice), but found that there was insufficient information to reliably determine the water quality necessary to protect wild rice at downstream points. Because of the degree of uncertainty, the MPCA found it reasonable to impose a limit to protect the groundwater standard for sulfate.

One goal of this compliance schedule is to determine what basin water sulfate concentration would protect applicable uses in downstream surface waters, in addition to groundwater, which should be protected by the 357 mg/L limit. The schedule of compliance in the permit requires significant investigation into the movement of water beneath and surrounding the basin to better evaluate the effects on surface water. The MPCA expects this information will provide support to determine the basin concentration necessary to protect all surface water and groundwater.

In the interim, the permit requires significant reductions in the sulfate concentrations of the basin to achieve compliance with the groundwater standard. The MPCA expects the reductions required by the permit will have direct benefits in reducing sulfate concentrations in the surrounding surface water.

F. Compliance Schedules do not comport with Federal Requirements

Summary of Comments:
The schedule fails to meet the requirements of 40 C.F.R § 122.47 because it lacks enforceable milestones, and a final compliance date. A schedule of compliance is not allowed by 33 U.S.C. § 1311(b)(1)(C). The schedules require submittals that become part of the permit without following public notice procedures.

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The schedule also appears to remove from MPCA the ability to approve any of the plans and schedules that the permittee would submit under the schedule. The permit should contain explicit, enforceable milestones that require the permittee to make progress toward and ultimately achieve compliance with water quality standards.

MPCA Response:
As described above, the permit authorizes a surface water discharge regulated by the Clean Water Act on the west side of the tailings basin (SD001) that has been determined to have reasonable potential to cause or contribute to exceedance of a water quality standard(s). The MPCA is imposing a compliance schedule for implementation of the Dark River Seep Collection and Return System at this discharge point. Because it is subject to the Clean Water Act, the requirements in the Act apply to the compliance schedule. The Clean Water Act requires compliance schedules to contain an enforceable sequence of actions or operations (not to exceed one year between milestones) leading to compliance as soon as possible. 40 C.F.R. § 122.47. EPA has interpreted its regulations to mean that a schedule must contain a final deadline and an enforceable final effluent limitation. *See* James A. Hanlon, "Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits," May 10, 2007. Additionally, the permitting authority should make a finding that the schedule will lead to compliance with the effluent limitation, and that such a schedule is appropriate.

The comment regarding section 1311(b)(1)(c) of the CWA appears to rely on dicta in an EPA administrator decision. The CWA requires achieving "any more stringent limitation, including those necessary to meet water quality standards, treatment standards, or schedules of compliance established pursuant of any state law." The decision referenced in the comment applies to EPA's authority to impose schedules, and holds that EPA cannot do so unless the state law authorizes such action.

The schedule to implement the Dark River Seep Collection and Return System meets the requirements described above by providing deadlines for starting construction on the project as well as deadlines for project completion and initiation.

The MPCA is requiring a separate compliance schedule to reduce concentrations in the tailings basin due to its effects on groundwater, and downgradient surface waters. The MPCA's authority to regulate groundwater is based on state law, not in the Clean Water Act. Minn. Stat. § 115.03. The MPCA has the authority under state law to write schedules of compliance that require compliance in the "shortest reasonable period of time." Minn. Stat. § 115.03 subd. 1(e); Minn. R. 7001.0150 subp. 2(A).

A Minnesota Supreme Court decision regarding MPCA's draft NPDES/SDS permit for the Alexandria Lake Area Sanitary District (ALASD) addressed the "shortest reasonable period of time" requirement. In the ALASD draft permit, the agency proposed to include a final effluent limit based on a future TMDL. An environmental group appealed this permit condition, arguing that the schedule of compliance was invalid because it lacked a specific end date, as well as the "enforceable sequence of actions" to meet the definition of a schedule under the CWA. *In re Alexandria Lake Area Sanitary Dist. NPDES/SDS Permit No. MN0040738*, 763 N.W.2d 303, 318 (Minn. 2009). The Minnesota Supreme Court upheld the schedule as complying with the CWA requirements, as well as state rule. The court held:

> We see no reason why the progressively more stringent effluent limits in the reissued permit do not constitute an "enforceable sequence of actions or operations leading to compliance with an effluent limitation." 33 U.S.C. § 1362(17). … Nothing in the CWA's definition of "schedule of compliance" requires that the sequence of events be tied to specific dates. Moreover, Minn. R. 7001.0150, subp. 2A, indicates that a "schedule of compliance" need only require compliance within "the shortest reasonable period of time." Therefore we hold that an NPDES permit condition that required a wastewater treatment facility to comply with effluent limits set by a TMDL study and implementation plan upon their future completion was enforceable within the meaning of "schedule of compliance" under 33 U.S.C. § 1362(17) and Minn. Stat. § 115.01, subd. 16.

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The schedule of compliance in the permit for the tailings basin should yield a similar outcome under state law. The permit requires a sequence of actions that will require meeting a final basin concentration, which will lead to compliance with groundwater and surface water standards. Like a draft TMDL, there is a possibility of the final limit being modified as a result of additional input or study; any change to the basin concentration limit would require a permit modification. The schedules and milestone deadlines submitted by the Permittee to satisfy the "Final Plans" requirement under the compliance schedule are enforceable permit conditions under the revised permit. Additionally, any proposed change to the final basin sulfate limit would be addressed through a major permit modification.

G. Shortest Reasonable Period of Time

Summary of Comments:
Clarification is needed on whether "or shortest reasonable period of time" extends beyond the specific stated deadline.

MPCA Response:
As described above in Topic F, state law requires compliance in the "shortest reasonable period of time." Minn. R. 7001.0150 subp. 2(A). This does not require that the events be tied to specific dates, but the permit does set deadlines based on the date of permit issuance. The use of "or shortest reasonable period of time" in the permit schedule of compliance was designed to ensure that milestones be achieved as soon as possible, but in no case later than the specified date or timeframe. MPCA has updated the language in the permit to clarify this intent, as shown below in italics:

> 5.29.28 To mitigate impacts from the Tailings Basin discharge to groundwater (SDS Compliance Schedule), the Permittee shall meet the following limits in the shortest reasonable period of time, but in no event later than the following times, unless the Permittee establishes through the investigation required under Part 2 below (Hydrological Investigation Work Plan) and/or Part 3 below (Basin Treatment Methods Study Plan) and other reliable data that other limits will result in compliance with the applicable water quality standards at all waters shown to be affected by pollutants released from the Tailings Basin or that other deadlines are necessary, and this permit has been amended to reflect those limits and/or deadlines:
>
> a) 357 mg/L sulfate within the tailings basin pool water no later than ten years of permit issuance; and
>
> b) 250 mg/L sulfate in the groundwater at the property boundary by December 31, 2025.

In addition to requiring that actions be taken in the shortest reasonable period of time, the schedule of compliance requires specific completion dates that are enforceable by the MPCA as terms of the permit.

H. Groundwater Impacting Surface Water

Summary of comments:
The MPCA recognizes that basin-impacted groundwater is currently reaching surface waters and having an impact on those surface waters. Do the limits proposed for groundwater adequately protect SW that receives GW discharge?
MPCA Response:
The groundwater limits in this permit are intended to protect specific groundwater uses. The permit requires surface water monitoring at several locations within the facility property boundaries (SW006 - Timber Creek, SW007 - Admiral Lake, SW008 - Dark River), as well as outside of the property boundaries (SW001 - Sand River, SW003 - Dark River, SW004 – Dark River trout reach, SW005 - Little Sandy Lake). The SW001, SW003, and SW004 stations are far enough

downstream that all contributions to the streams from groundwater will likely have occurred prior to these stations. Investigations required under the schedule of compliance within the permit are meant to further assess groundwater-surface water interactions, and to determine what concentration of pollutants in the basin, which then travel via groundwater, would allow surface water standards to be met.

Responses to comments related to the groundwater-surface water interaction relating to wild rice are in Topic J.

I. Surface Seeps

Summary of comments:
The Draft Permit and Fact Sheet both allude to the fact that there are additional surface seeps around the tailings basin perimeter, and that these seeps will need to be studied further under permit compliance. ...All of these seeps are point source discharges under the CWA. MPCA must document all known seeps and set monitoring requirements and effluent and flow limits at them.

MPCA Response:
The existing NPDES/SDS permit does not require seepage surveys or specifically require seep reporting to the MPCA. The reissued permit will require annual survey of surface seeps. If any are found, the permit requires water quality sampling. U.S. Steel must report discovering the seep and the sampling results. The permit states:

> *"Individual seeps or seepage zones that are discharging at greater than 5 gallons per minute during the October survey shall be monitored monthly for flow, specific conductance, pH, total iron, total sulfate, total suspended solids, and temperature and those results shall be reported in a supplement to the monthly DMR."*

U.S. Steel may apply for a permit modification to authorize the seeps. Alternatively, it may stop the discharge to avoid having seeps treated as an unauthorized discharge as follows:

> *"If seepage is discovered during the annual seepage survey that flows to any water not listed as a receiving water in the permit, the Permittee must take measures to prevent the seepage from entering those waters or seek modification of the permit to authorize the discharge under the permit."*

Additional receiving waters are listed in the permit based on the seeps that MPCA is currently aware of, and the permit requires action be taken if additional seeps are found to contribute to other receiving waters. Failure to take one of those actions means that the discharge is not authorized by the permit and the permittee could be subject to enforcement action. In addition, the Dark River Seepage Collection & Return System is required by the permit to eliminate surface water discharges from the west side of the basin. Any discovered seeps flowing to areas not listed as receiving waters must be eliminated unless the permit is modified to allow the discharge. In the absence of such allowance, the seeps are an unauthorized discharge.

A discharge monitoring station (SD 006) has been added to the permit to monitor seepage to wetlands along the north-central portion of the basin dam. The location was identified based on historic reports and observations as well as the 2017 Tailing Basin Status Report submitted to MDNR by U.S. Steel. There is no water quality monitoring data or flow data for these points, nor is MPCA aware of a surface water outlet. As a result, the MPCA finds that there is no reasonable potential to exceed water quality standards at this point. The MPCA will reevaluate this after receiving the monitoring data required in the permit. Although hydrogeologic conditions do not favor as much seepage to the north of the basin as to the east and west, MPCA is not aware of any plans by U.S. Steel to recapture seepage from this area.

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J. Wild Rice Sulfate Standard

Summary of comments:
Under the Clean Water Act, Minnesota's existing wild rice sulfate standard of 10 milligrams per liter should be applied to all waters used for the production of wild rice affected by Minntac Tailings Basin discharge (Twin Lakes, Sand River, and Dark Lake). Wild Rice should be considered a Class 2 use as "lower aquatic biota."

MPCA Response:
In the 2015 legislative session, the Minnesota legislature prohibited MPCA from taking any actions to implement the standard that would require a permittee "to expend money for design or implementation of sulfate treatment technologies or other forms of sulfate mitigation." MINN. LAWS 2015, 1st Spec. Sess., Chapter 4, Article 4, Section 136 ("2015 Wild Rice Legislation") The 2015 Wild Rice Legislation required MPCA to complete rulemaking to promulgate a new Wild Rice standard by January 15, 2018. *Id.* at (c). Legislation passed during the 2017 session extended the deadline to complete the rulemaking to January 2019. The MPCA proposed a revised water quality standard in 2017, but it was disapproved by an administrative law judge. Following disapproval, the MPCA withdrew the Wild Rice rule from the rulemaking process to allow for more work on the implementation process. The MPCA continues to support the scientific basis developed in the rulemaking and believes clarification of the rule's application is needed, such as adopting the waters to which the standard applies into rule.

The legislative directive to revise the water quality standard remains in effect. 2015 MINN. LAWS 1st Spec. Sess. ch. 4, Art. 4, § 136; 2017 MINN. LAWS ch. 93, Art. 2, § 149. In addition, the MPCA believes it should clarify the applicability of the wild rice standard by identifying in rule the waters to which the standard applies. By the time the investigation required by the permit is complete, the MPCA expects to have greater clarity on the appropriate wild rice standard.

The NPDES discharges authorized in the permit include SD001, which is subject to a compliance schedule eliminating the discharge, and SD006, for which MPCA found no reasonable potential to exceed water quality standards. As a result, the Clean Water Act does not require imposing a water quality-based effluent limit. *See* 40 C.F.R. § 122.44(d)(1)(i) (requiring a water quality-based effluent limit where there is reasonable potential to exceed water quality standards).

Regarding the comment that wild rice should be considered a class 2 use, the MPCA has repeatedly asserted and provided an affirmative demonstration in the SONAR and the Response to Comments dated November 22, 2017, that the wild rice beneficial use is appropriately retained as a Class 4 use, related to agriculture and wildlife uses; it is not a Class 2 use. The MPCA established this beneficial use through rulemaking in 1973 and rule amendments in 1997. When the Class 4A wild rice beneficial use was adopted in 1973 it clearly did not apply to all waters, which is evidence of the fact that this beneficial use is not and should not be interpreted as a CWA section 101(a)(2) use. As noted on pp. 33-35 of the SONAR, in the rulemaking the MPCA is clarifying the existing Class 4 beneficial use; the MPCA is not removing the existing Class 4 beneficial use, nor designating a new wild rice beneficial use. This effort is focused on protecting the specific wild rice beneficial use of use of the grain as a food source for humans and wildlife, not aquatic life more generally as do CWA 101(a)(2) uses. Furthermore, while wild rice is a food source for wildlife, it is not the only food source and it is therefore not reasonable to conclude that the Class 4 wild rice beneficial use is "necessary for protection and propagation of fish, shellfish and wildlife."

K. Mercury Methylation due to Sulfate

Summary of comments:
Monitoring and pollution reduction mechanisms in the Minntac Tailings Basin Draft Permit should be revised to reflect impacts of excessive sulfate discharge on mercury methylation and phosphorus release from sediments. The final

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Minntac Tailings Basin Permit and Fact Sheet should include a comprehensive analysis of the multiple factors in receiving waters that make discharge of elevated sulfate to the Sand River and Dark River sub-watersheds and the Little Fork River and Rainy River watersheds a high-risk situation for mercury in fish tissue, eutrophication and turbidity impairments.

MPCA Response:
MPCA is aware of the scientific research demonstrating that the microbial reduction of sulfate to sulfide appears to have a linkage to methylation of inorganic mercury. At this point, current research shows this to be a highly variable phenomenon, with many factors affecting the extent to which this occurs in a particular biogeochemical setting. Given this, and that there are currently no existing or proposed water quality standards for sulfate relating to the methylation of mercury, MPCA finds it infeasible to include limits on sulfate solely to address the potential for mercury methylation. It is beyond the scope of an NPDES/SDS permit to include such research. Mercury fish tissue concentrations in these waters will continue to be monitored under Minnesota's Fish Contaminant Monitoring Plan.

L. Monitoring Wells

Summary of comments:
The existing monitoring well network is insufficient to assess pollutant transport in groundwater along the basin perimeter. Additional wells and parameters should be added.

MPCA Response:
The existing and proposed wells in the permit target areas where glacial deposits and bedrock topography create conditions that allow for greater groundwater flow. The permit compliance schedule also requires investigation of pollutant sources and flowpaths. If there are areas of concern identified by this investigation, or by research and modeling being conducted and overseen by DNR, additional wells may be added if needed. The goal of the monitoring required by the NPDES/SDS permit is to characterize the water movement, unlike a landfill where small, isolated leaks are sought. The basin is known to lose water over much of its area, so the density of wells applicable to a landfill is not needed. The current well network is sufficient to assess the known pollutant transport and the permit allows for increasing the monitoring network.

M. Toxicity Testing

Summary of comments:
The whole effluent toxicity (WET) testing requirements in the permit should be expanded, including the addition of the chronic test method for green alga, and in-stream assessments of biological health.

Conversely, the WET testing requirements are excessive and should be eliminated from SD001 and SW005 because there could be other sources, SD001 should be eliminated, and SW005 is not representative of the discharge. (Comment 1-40)

MPCA Response:
MPCA has water quality standards addressing toxicity. Specifically, Minnesota Rule 7050.0220 subp. 6(E). WET testing is a widely accepted measure of compliance with the toxicity standards.

According to EPA's NPDES Permit Writers manual, "biocriteria generally are not directly implemented through NPDES permits but could be used in assessing whether a waterbody is attaining water quality standards. Nonattainment of biocriteria could lead to parameter-specific effluent limitations where the permitting authority is able to identify specific

pollutant(s) and source(s) contributing to that nonattainment (see EPA's Biocriteria: Uses of Data – Identify Stressors to a Waterbody Website <www.epa.gov/waterscience/biocriteria/uses/stressors.html>) or could lead to WET limitations where the permitting authority identifies sources of toxicity to aquatic life. EPA's Biocriteria: Uses of Data - NPDES <www.epa.gov/waterscience/biocriteria/watershed/npdes.html> provides examples on the use of bioassessment information in the NPDES permitting process."

MPCA has found that green algae is very tolerant to most pollutants, with the exception of herbicides. Therefore, unless that is a suspected class of pollutants, MPCA does not require green algae as part of the WET testing requirement in permits.

U.S. Steel recently began toxicity testing and/or biological monitoring downstream and downgradient from the facility in the Dark River, Sand River, and Timber Creek, in support of its UAA and SSS requests. This work is expected to provide significant information on any impact the basin may be having on aquatic life in the area. In addition to this, the permit requires whole effluent toxicity testing at the SD 001 outfall point to ensure that the facility's point source discharge does not cause a violation of the applicable toxicity standard.

N. Specific Conductance Limits for Aquatic Life

Summary of comments:
Limits on specific conductance should be set for Minntac Tailings Basin discharge to protect aquatic life in compliance with the Clean Water Act and narrative water quality standards. To set limits on specific conductivity for Minntac Tailings Basin discharge, the MPCA should use Minnesota data and reports and EPA benchmarks and methods to protect 95 percent of benthic invertebrate genera, with a predicted protective numeric value for specific conductivity for this permit of 320 µS/cm.

MPCA Response:

Minnesota has not adopted a specific conductance standard for aquatic life, nor has one been proposed in rulemaking. It is beyond the scope of the permitting process to conduct the studies that would be required to develop a site-specific standard for specific conductance for the surface waters impacted by the basin. The EPA draft guidance referenced in the comment, "Field-Based Methods for Developing Aquatic Life Criteria for Specific Conductivity," was opened to public comment in the Federal Register on December 23, 2016 (81 Fed. Reg. 94370). MPCA will be reviewing the guidance document, the underlying science, and submitted comments, but it is premature to establish permit conditions based on the guidance at this time.

MPCA is relying on toxicity testing and biological evaluations to ensure adequate protection of aquatic life, because these are better-established indicators of the actual effects of effluent in a given stream. The draft permit evaluated potential impacts to Class 2 uses in downstream waters and contains requirements to protect those uses. Review of reported concentrations at SD001 for parameters that have standards to protect Class 2 waters did not indicate there was reasonable potential to cause or contribute to exceedance of these standards in waters downstream from this discharge. Therefore, limits were not assigned for any of these parameters. To protect against possible aquatic life impacts from pollutants without Class 2 concentration limits, the permit requires Whole Effluent Toxicity (WET) testing of the discharge at SD001, or in the Dark River after construction of the seepage collection and return system captures this discharge. Past assessments of the biological integrity of nearby streams were also reviewed during permit development. To date, there is no known impairment of the biological integrity in the Dark River immediately downstream of the tailings basin. Assessments of fish and macroinvertebrates populations were undertaken by PCA in

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2005 and 2008, and U.S. Steel began biological assessment activities in the Dark River, Sand River, and Timber Creek in the fall of 2017, and will continue in the summer of 2018.

Attachment A

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Charles	Holmstrom	Bovey	MN	55709
Scott	Holter	Cook	MN	55723
John	Homola	Gilbert	MN	55741
Gary	Horack	Hibbing	MN	55746
Tom	Horvath	Meadowlands	MN	55765
David	Houghton	Hibbing	MN	55746
James	Hull	Hoyt Lakes	MN	55750
Mike	Hultman	Eleventh	MN	55734
Charles	Hunstiger	Marble	MN	55764
Chad	Hunt	Aurora	MN	55705
Ryan	Hurley	Eveleth	MN	55734
Mike	Husmann	Hibbing	MN	55746
Steve	Hutchings	Chisholm	MN	55719
Phillip	Hwyck	Hibbing	MN	55746
Samuel	Hyppa	Angora	MN	55703
Barry	Irish	Iron	MN	55751
Thomas	Jacklen	Angora	MN	55703
Ross	Jacobsen	Virginia	MN	55792
Paul	Jacobson	Eleventh	MN	55734
Cory	Janeziin	Chisholm	MN	55719
Jason	Janisch	Hibbing	MN	55746
Julie	Jarvi	Eleventh	MN	55734
James	Jarvi	Eveleth	MN	55734
Michael	Jerkovich	Hibbing	MN	55746
Stony	Jesperson	Eleventh	MN	55734
Shane	Jivery	Keewatin	MN	55753
Tim	Johnsen	Virginia	MN	55792
Paul	Johnson	Britt	MN	55710
David	Johnson	Meadowlands	MN	55765
Kevin	Johnson	Virginia	MN	55792
Lana Jo	Johnson	Bovey	MN	55706
Gary	Johnson	Cromwell	MN	55726
Chris	Johnson	Eleventh	MN	55734
Kevin	Johnson	Pengilly	MN	55775
Jerry	Johnson	Britt	MN	55710
Jeff	Johnson	Iron	MN	55751
Bruce	Johnson	Virginia	MN	55792
Grant	Johnson	Britt	MN	55710
Dana	Johnson	Embarrass	MN	55732

Attachment A

Signatories to U.S. Steel Form Letter Comments regarding the Draft Permit

First Name:	Last name:	City:	State:	Zip Code:
Randy	Johnson	Hibbing	MN	55746
Michael	Jones	Gilbert	MN	55741
Brandon	Jones	Hibbing	MN	55746
Kirby	Jordahl	Gilbert	MN	55741
Anne	Jordon	Mt Iron	MN	55768
Steve	Jowers	Biwabik	MN	55708
Andrew	Kainz	Virginia	MN	55792
Garrett	Kaivola	Mt Iron	MN	55768
Pat	Kaldahl	Aurora	MN	55705
Eric	Kansen	Hermantown	MN	55811
James	Kanstrenius	Embarrass	MN	55732
Roy	Kanyo	Zim	MN	55738
John	Karasti	Side Lake	MN	55781
Brandon	Karnes	Hibbing	MN	55746
Bill	Kearney	Hibbing	MN	55746
Tim	Kelasch	Nashwauk	MN	55769
John	Kemp	Aurora	MN	55705
David	Kepler	Hibbing	MN	55746
Mark	Kesiean	Cloquet	MN	55720
Austin	Kienaas	Virginia	MN	55792
Clifford	Kimball	Virginia	MN	55792
Paul	King	Hoyt Lakes	MN	55750
John	Kingston	Mt. Iron	MN	55768
David	Kishel	Eleventh	MN	55741
Keith	Knudson	Virginia	MN	55792
Mike	Knutson	Britt	MN	55710
Shaun	Kober	Mt Iron	MN	55768
Justin	Kochar	Eveleth	MN	55734
Craig	Kohler	Bull	MN	55713
Bradley	Kohler	Gilbert	MN	55741
Rick	Kois III	Chisholm	MN	55746
Brian	Koland	Hibbing	MN	55746
Travis	Kolani	Virginia	MN	55792
Joel	Kopil	Meadowlands	MN	55765
Dan	Koski	Hibbing	MN	55746
Mike	Koslucher	Hibbing	MN	55746
Brian	Kozar	Cook	MN	55723
Nathan	Kranz	Virginia	MN	55792
Steve	Krasaway	Hibbing	MN	55746
Edward	Krebs	Eveleth	MN	55734
David	Kritz	Hibbing	MN	55746
Gerald	Krueger	Hibbing	MN	55746
Alan	Krueth	Virginia	MN	55792

Attachment A

Signatories to U.S. Steel Form Letter Comments regarding the Draft Permit

First Name:	Last name:	City:	State:	Zip Code:
Greg	Kujala	Hibbing	MN	55746
Scott	Lackner	Virginia	MN	55792
Jeff	Laitala	Hibbing	MN	55746
Michael	Lamar West	Hibbing	MN	55746
Kevin	LaMotte	Gilbert	MN	55741
Brian	Landborg	Eleventh	MN	55734
Ed	Lanfranchi	Virginia	MN	55792
Craig	Lanklconen	Eveleth	MN	55734
Kurt	Lanners	Nashwauk	MN	55769
Erik	Larksonen	Virginia	MN	55792
Bruce	Larsen	Britt	MN	55710
Gary	Larson	Gilbert	MN	55741
Nathan	Larson	Duluth	MN	55811
Scott	Larson	Biwabik	MN	55708
Lisa	Laugen	Hoyt Lakes	MN	55750
Lyn	Lawrence	Hibbing	MN	55746
April	Levar	Ely	MN	55731
Kyle	Levy	Embarrass	MN	55732
James	Lind	Iron	MN	55751
Jeanne	Lind	Hibbing	MN	55746
Susan	Lindberg	Virginia	MN	55792
Jerime	Linseth	Britt	MN	55710
Raymond	Litchy	Hibbing	MN	55746
Charles	Lokken	Angora	MN	55703
Thomas	Lomsah	Nashwauk	MN	55769
Mike	Lopac	Buhl	MN	55713
Diane	Lorenz	Hibbing	MN	55746
Len	Lund	Cloquet	MN	55720
Cory	Lundin	Chisholm	MN	55719
Tom	Lundquist	Virginia	MN	55792
Matt	Luoma	Eleventh	MN	55734
Floyd	Luomanen	Virginia	MN	55792
Dennis	Lustig	Virginia	MN	55792
Richard	Lynn	Aurora	MN	55705
James	Lytton	Gilbert	MN	55741
Will	Maccani	Aurora	MN	55705
LeRoy	Mackey	Hibbing	MN	55746
Troy	Maki	Goodland	MN	55742
Patrick	Maki	Chisholm	MN	55719
Brian	Maki	Hibbing	MN	55746
Tyler	Maki	Hibbing	MN	55746
Jaron	Maki	Eleventh	MN	55734
Brian	Maki	Hibbing	MN	55746

Attachment A

Signatories to U.S. Steel Form Letter Comments regarding the Draft Permit

First Name:	Last name:	City:	State:	Zip Code:
Gary	Maninga	Hoyt Lakes	MN	55750
Jean	Manning	Virginia	MN	55792
Todd	Martin	Tower	MN	55790
Vickie	Martinson	Gilbert	MN	55741
David	Marturano	Iron	MN	55751
Timothy	Masters	Eveleth	MN	55734
Mark	Mathiey	Eveleth	MN	55734
Chuck	Mattson	Hibbing	MN	55746
Joe	Mattson	Britt	MN	55710
Todd	Matvey	Floodwood	MN	55736
Jay	McCarroll	Deer River	MN	56636
Robert	McClelland	Virginia	MN	55792
Tedd	McCue	Eleventh	MN	55734
Phil	McDermid	Virginia	MN	55792
Mitch	McDonald	Virginia	MN	55792
Wendy	McFenan	Angora	MN	55703
Michael	McKnight	Baxter	MN	56425
Robert	Mehle	Virginia	MN	55792
Aaron	Meittunen	Hibbing	MN	55746
Michele	Mesich	Virginia	MN	55792
Lorne	Middlestead	Hibbing	MN	55746
Nancy	Middlestead	Hibbing	MN	55746
Daniel	Miller	Virginia	MN	55792
David	MIller	Cotton	MN	55724
Jeffrey	Milos	Gilbert	MN	55741
Brian	Minerick	Nashwauk	MN	55769
Lance	Minko	Eleventh	MN	55734
John	Minor	Hibbing	MN	55746
Leslie	Minter Jr	Virginia	MN	55792
Robert	Mitchell	Hibbing	MN	55746
Clarence	Mitchell	Chisholm	MN	55719
Derek	Moe	Virginia	MN	55792
Ivan	Mouw	Embarrass	MN	55732
Nick	Mulner	Hibbing	MN	55746
Phillip	Nelson	Chisholm	MN	55719
Cory	Nelson	Goodland	MN	55742
Steven	Nelson	Tower	MN	55790
David J.	Nelson	Hibbing	MN	55746
Mark	Niemi	Virginia	MN	55792
Allen	Niemi	Virginia	MN	55792
Matt	Niemi	Virginia	MN	55792
Bob	Niemi	Britt	MN	55710
Rick	Niemi	Eveleth	MN	55734

Attachment A Signatories to U.S. Steel Form Letter Comments regarding the Draft Permit				
First Name:	**Last name:**	**City:**	**State:**	**Zip Code:**
Aaron	Nivala	Mt Iron	MN	55768
Pat	Noonan	Keewatin	MN	55753
Marvin	Nordling	Aurora	MN	55705
Mitch	Nosbisck	Britt	MN	55710
Clint	Novak	Virginia	MN	55792
Clark	Nurmi	Angora	MN	55703
Todd	Nyman	Aurora	MN	55705
Jack	Oakman	Eleventh	MN	55736
Seth	Olson	Virginia	MN	55792
Chad	Olson	Canyon	MN	55717
Roger	Olson	Virginia	MN	55792
LeRoy	Olson	Chisholm	MN	55719
Shad	Olson	Virginia	MN	55792
Gerald	Orrell	Cook	MN	55723
Bryan	Otto	Hibbing	MN	55746
Brian	Otto	Eleventh	MN	55734
Timothy	Overbye	Mt Iron	MN	55768
Robert	Overfors	Virginia	MN	55792
Greg	Paciott	Hibbing	MN	55746
Kaler	Palm	Aurora	MN	55705
Barry	Parendo	Hoyt Lakes	MN	55750
Frank	Pariff	Mt Iron	MN	55768
Christopher	Pasch	Makinen	MN	55763
Joshua	Pasch	Virginia	MN	55792
Jack	Paskvan	Britt	MN	55710
Rodney	Peckey	Pengilly	MN	55775
Ron	Pekkarinen	Makinen	MN	55763
Jeffrey	Pelkey	Buhl	MN	55713
Damen	Penoncelo	Britt	MN	55710
Brad	Perala	Aurora	MN	55703
Bruce	Perander	Britt	MN	55710
Michael	Perkovich	Chisholm	MN	55719
Brian	Persons	Pengilly	MN	55775
Mike	Persons	Eleventh	MN	55734
Kerry	Perushek	Ely	MN	55731
Nick	Peters	Hibbing	MN	55746
Paul	Petersen	Buhl	MN	55713
Blake	Peterson	International Falls	MN	56649
Dan	Peterson	Makinen	MN	55763
Michael	Peterson	Britt	MN	55710
Dan	Peterson	Gilbert	MN	55741
Kurt M.	Peterson	Eveleth	MN	55734
Lawrence	Pettinelli	Britt	MN	55710

Attachment A

Signatories to U.S. Steel Form Letter Comments regarding the Draft Permit

First Name:	Last name:	City:	State:	Zip Code:
Frank	Pezzutto	Virginia	MN	55792
David	Pibtila	Makinen	MN	55763
Pat	Pickett	Mountain Iron	MN	55768
Jeff	Pine	Britt	MN	55710
Tod	Plackner	Bovey	MN	55709
Tim	Plackner	Hermantown	MN	55811
Robert	Pluskwik	Virginia	MN	55792
Zach	Polich	Britt	MN	55710
Ray	Pontinen	Eleventh	MN	55734
Jeff	Potocnik	Biwabik	MN	55708
Brian	Potter	Hibbing	MN	55746
Joseph	Powell	Hibbing	MN	55746
Joseph	Prestin	Ave	MN	55792
Scott	Preston	Mt. Iron	MN	55768
Craig	Pulley	Eleventh	MN	55734
Larry	Putkonen	Nashwauk	MN	55769
James	Puzel	Eleventh	MN	55731
Dustin	Rabideaux	Virginia	MN	55792
Julie	Ramford	Iron	MN	55751
Peter	Ramfyord	Iron	MN	55751
Tyler	Ranta	Virginia	MN	55792
Jerry	Rasmussen	Virginia	MN	55792
Bradley	Redmond	Virginia	MN	55792
Richard	Rehak	Mt Iron	MN	55768
Richard	Rehak	Mt. Iron	MN	55768
Paula	Remington	Eleventh	MN	55734
Faith	Remington	Virginia	MN	55792
Benjamin	Remington	Eleventh	MN	55734
James	Remmers	Marcell	MN	56657
Mark	Renme	Britt	MN	55710
Nate	Rewertz	Hibbing	MN	55746
Tom	Ribich	Gilbert	MN	55741
Scott	Rice	Hibbing	MN	55746
Blaine	Rinell	Virginia	MN	55792
Daniel	Ritter	Warba	MN	55793
Kelly	Rivers	Ely	MN	55731
Paul	Roberts	Nashwauk	MN	55169
Matt	Robillard	Eveleeth	MN	55734
David	Roche	Hibbing	MN	55746
Laura	Rosier	Eveleth	MN	55734
Mike	Roskaski	Hibbing	MN	55746
Tom	Ross	Eleventh	MN	55734
Cynthia	Rowland	Buhl	MN	55713

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Signatories to U.S. Steel Form Letter Comments regarding the Draft Permit

First Name:	Last name:	City:	State:	Zip Code:
Jason	Ruotsalainen	Iron	MN	55751
Erick	Ruuska	Cook	MN	55723
Gregory	Ryder	Hibbing	MN	55746
Mike	Saatela	Mt Iron	MN	55768
Mary	Sadar	Eveleth	MN	55734
William	Saihkonen	Gilbert	MN	55741
John	Sale	Hoyt Lakes	MN	55750
Mike	Sand	Aurora	MN	55705
Peter	Sandnas	Virginia	MN	55792
Jon	Sarkela	Iron Mountain	MN	55791
Mark	Sautek	Chisholm	MN	55719
Pat	Savage	Hibbing	MN	55746
Tim	Savelq	Angora	MN	55703
Eric	Saxhaug	Eleventh	MN	55734
Mark	Saxhaug	Britt	MN	55710
Joseph	Schechinger	Gilbert	MN	55741
Martin	Schele	CooK	MN	55723
Noah	Schmeher	Hibbing	MN	55746
Jacob	Schmelzer	Chisholm	MN	55719
Jeremy	Schneigen	Meadowlands	MN	55765
John	Schreffler	Ely	MN	55731
Gustave	Schroeder	Embarrass	MN	55732
Kevin	Schroeder	Embarrass	MN	55732
Randy	Schroeder	Embarrass	MN	55732
Angela	Schwenk	Babbitt	MN	55706
Alex	Schwenk	Babbitt	MN	55706
Shawn	Scinto	Mountain Iron	MN	55768
Thomas	Scott	Mt Iron	MN	55768
Jennifer	Segraves	Aurora	MN	55705
Pete	Senich	Hibbing	MN	55746
Brian	Seppla	Chisholm	MN	55719
Vinay	Sharma	Mountain Iron	MN	55768
Greg	Shaw	Hibbing	MN	55746
Dale	Shaw	Hibbing	MN	55746
Duane	Shepepsky	Chisholm	MN	55719
Kori	Sherwood	Virginia	MN	55792
Jeremy	Showalter	Chisholm	MN	55719
Dan	Siebert	Mt. Iron	MN	55768
Mat	Siekkinen	Hibbing	MN	55746
Teresa	Simetkosky	Mt. Iron	MN	55768
Tom	Simonson	Hibbing	MN	55746
Michael	Simonson	Hibbing	MN	55746
Ken	Simonson	Eveleth	MN	55734

Attachment A

Signatories to U.S. Steel Form Letter Comments regarding the Draft Permit

First Name:	Last name:	City:	State:	Zip Code:
Richard	Skalsky	Hibbing	MN	55746
Steve	Skandis	Virginia	MN	55792
Pete	Skardis	McKinley	MN	55741
Susan	Skaudis	Virginia	MN	55762
Peter	Skorich	Virginia	MN	55792
Mike	Skubic	Virginia	MN	55792
Joseph	Skull	Hibbing	MN	55746
Leon	Slater	Hibbing	MN	55746
Scott	Slygh	Eveleth	MN	55734
Paul	Smith	Virginia	MN	55792
Briana	Smith	Iron	MN	55751
Tom	Snihkoner	Tower	MN	55790
Curtis	Spiering	Hibbing	MN	55746
Thomas	Stahl	Hibbing	MN	55746
Gregory	Stainiger	Chisholm	MN	55719
Gary	Stanawlay	Gilbert	MN	55741
RJ	Stanek	Hoyt Lakes	MN	55750
Dan	Stanzell	Virginia	MN	55792
David	Starich	Britt	MN	55710
Brian	Stavnes	Hibbing	MN	55746
Lee	Stedblay	Biwabik	MN	55708
John	Stegar	Hibbing	MN	55746
Scott	Sterbenz	Hibbing	MN	55746
Robert	Sterns	Hibbing	MN	55746
Jim	Stevison	Gilbert	MN	55741
Rhonda	Stillwell	Aurora	MN	55705
Gary	Stirewalt	Chisholm	MN	55719
Ron	Stocco	Keewatin	MN	55753
John	Storn	Cook	MN	55723
Dustin	Strand	Keewatin	MN	55753
Luke	Strub	Virginia	MN	55792
Jonathan	Stuntebeck	Chisholm	MN	55719
Sam	Suhonth	Hibbing	MN	55746
Angela	Suihkonen	Virginia	MN	55792
John	Sundquist	Chisholm	MN	55719
Chris	Surface	Virginia	MN	55792
Dan	Sutherland	Bovey	MN	55709
Benjamin	Sutton	Chisholm	MN	55719
Robert	Swanson	Hoyt Lakes	MN	55750
Chris	Swanson	Pengilly	MN	55775
Kent	Swanson	Hibbing	MN	55746
Thad	Sweeney	Hoyt Lakes	MN	55750
Michael	Sweno	Hoyt Lakes	MN	55750

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Signatories to U.S. Steel Form Letter Comments regarding the Draft Permit

First Name:	Last name:	City:	State:	Zip Code:
Jeffery	Swick	Pengilly	MN	55775
Angela	Syrc	Hibbing	MN	55746
Joe	Szweduik	Angora	MN	55703
Jesse	Talo	Iron	MN	55751
Mark	Tanem	Hibbing	MN	55746
Steve	Taray	Virginia	MN	55792
Joseph	Tawyea	Virginia	MN	55792
Lee	Taylor	Hibbing	MN	55746
Aimee	Terzich	Hibbing	MN	55746
Bryan	Terzid	Hibbing	MN	55746
Mike	Theodore	Hibbing	MN	55946
Craig	Thompson	Buhl	MN	55713
Alek	Thro	Mt. Iron	MN	55768
Jesse	Thronson	Chisholm	MN	55719
Carl	Toivari	Virginia	MN	55792
John	Toldo	Chisholm	MN	55719
Michael	Toldo	Side Lake	MN	55781
Craig	Tomassini	Hibbing	MN	55746
Ryan	Torbuck	Bovey	MN	55709
Blake	Triebwasser	Cotton	MN	55724
Preston	Tripp	Embarrass	MN	55732
Adam	Troumbly	Bovey	MN	55709
Neal	Troumby	Coleraine	MN	55722
Matthew	Truitt	Baubitt	MN	55706
Rick	Trunzo	Virginia	MN	55792
Terry	Tuboyeuier	Taconite	MN	55786
Chris	Turner	Eleventh	MN	55734
Robert	Tzgonc	Chisholm	MN	55719
Scott	Vagle	Tower	MN	55790
Shaun	Valla	Hibbiing	MN	55746
Roger	Van Dyke	Hibbing	MN	55746
Kelly	Vitek	Chisholm	MN	55719
Jarod	Vitek	Chisholm	MN	55719
Alan	VonHavermeat	Grey Eagle	MN	56336
Patricia	Vukad	Chisholm	MN	55719
Jason	Wagner	Embarrass	MN	55732
Jeremy	Waldron	Eleventh	MN	55734
Jeffery	Wallner	Britt	MN	55710
Chris	Warner	Hibbing	MN	55746
Peter	Waselk	Hibbing	MN	55746
William	Washington	Mt. Iron	MN	55768
Erik	Watczak	Duluth	MN	55803
John	Wauzynski	Eleventh	MN	55734

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Signatories to U.S. Steel Form Letter Comments regarding the Draft Permit

First Name:	Last name:	City:	State:	Zip Code:
John	Wauzynski	Mt Iron	MN	55768
Jared	Waycher	Embarrass	MN	55732
Barry	Weisinger	Ely	MN	55731
Ryan	Weiss	Biwabik	MN	55708
Bengkt	Welander	Virginia	MN	55792
Eugene	Welinski	Floodwood	MN	55736
Robert	Wellad	Hibbing	MN	55746
John	West	Eveleth	MN	55734
Joe	Westerberg	Hibbing	MN	55746
Ken	White	Hibbing	MN	55746
Neil	Willconson	Aurora	MN	55705
Rob	Wilmunen	Ely	MN	55731
Steve	Wirtz	Nashwauk	MN	55769
Lee	Wiswell	Britt	MN	55710
David	Witiitney	Keewatin	MN	55753
Tim	Woitalla	Tower	MN	55790
Jason	Workman	Mountain Iron	MN	55768
Tom	Wright	Aurora	MN	55705
William	Wyman	Meadowlands	MN	55768
D. Zack	Young	Eveleth	MN	55734
Robert	Youngman	Virginia	MN	55792
Shawn	Youso	Britt	MN	55710
Jody	Youso	Britt	MN	55710
Chuck	Youy	Sturgeon Lake	MN	55783
Robert	Zamlen	Chisholm	MN	55719
John	Zelesnikar	Iron	MN	55751
Joe	Zika	Cook	MN	55723

Attachment B

Signatories to Water Legacy Form Letter Comments regarding the Draft Permit

Kimberley Wagner	Janet Neihart
Kathy Glover	Gail Linnerson
Michael Koppy	Maksim Semeniuk
Diane Brown	Janet Draper
Sharon Powell	Rick Simmons
Jane Norling	Nancy Conger
Joan Christensen	Greg Rottach
Suzanne Birch	Kevin Brewster
Annah Gardner	Pam LeBlanc
christine popowski	Marilla MacGregor
Don Watson	Pamela Jo Meyer
Jonathan Chin	Don Hon
Gregory T Ochs	james McCluskey
Harriet McCleary	kathleen spencer
Elene Loecher	Patricia Mcnabb
Joan Nichols	Lindsay Sovil
Chris Romano	Beverly Payne
Patricia Lowinske	William Andersen
Franz Kitzberger	Jane Fisher-Merritt
sheila maybanks	Sharon Fortunak
Jack Liebo	Louis Asher
Elizabeth Burr	Barb Cooper
Maxene Linehan	Theresa del Rosario
A Bonvouloir	Tricia Pearson
Christine Harshman	Adam Swanson
Katherine Bohn	Brad Carlson
Stephen Rossiter	Margaret Cooper
Alice Bowron	Gerald Riach
Deanne Roquet	Jerome Comeau
christine tendle	Charles Frach
Lani Jacobsen	sandy halling
Al Gedicks	River Gordon
Bill Schnell	Cecilia Lieder
Kathryn Null	Rita Johnstone
Paul Moore	Bob Haugen
Craig Samson	Lydia Grey
Martha Krikava	Lynn C. Lang
Arla Schumack	Catherine Dahir
Nicole Everling	Eva Weir
Debra Johnson	Rebecca Dudley
Andrew Smith	Elizabeth Lempp
Dan Vojcak	Joseph Wenzel
Wade Johnson	Shirley Huskins
Tracy Sides	Robert Schmitz

Attachment B

Signatories to Water Legacy Form Letter Comments regarding the Draft Permit

pat fillmore	Amy Okaya
Cathie Duncan	Jack Meyer
Mary Pouliot	Marie Nickell
Mary Lou Wilen	Chris CONTEMPL8 T-SHIRTS
Beret Amundson	Paula Rusterholz
Lilli Sprintz	Karen Benson
Natasha Baird	Lawrence Clemens
Dave Carlson	Lawrence Clemens
John Arrayet	Sigrid Arnott
Anne Griffin-Lewin	Dianne Polasik
Patricia Galligher	Christina Krauz
Warren Howe	L Carroll
Kristen Palazzari	Larry Johnson
Doretta Reisenweber	Connie Kirvida-Lehr
Dan La Vigne	Kurt Kimber
Lynn Shoemaker	Teresa Trampe
Rick Fry	Susan Dettweiler
C. Thomas Maskell	Diane Tessari
Monique Dubos	Dennis Mashuga
sharron doran	Carol Sayres
Richard Nethercut	cynthia jaksa
Zabelle Stodola	Duane Gustafson
Drew & Karie Johnson	Barbara Janssen
Mark Roalson	HEYWARD NASH
Jinger Pulkrabek	Erik Torgerson
Richard Bachman	Hugh Curtler III
Kristina Smitten	Michelle Gobely
Sylvia Lambert	jason husby
fran whitman	John Viacrucis
Gerald Wambach	gerry fuller
Elisabeth Peterson	Richard Fish
Cheryl Engel	Jean Bixley
Diane J. Peterson	Lydia Garvey
Berning Green	Sue Halligan
Janet Karon & Warren Howe	Mina Blyly-Strauss
Chris Heeter	Lisa Bey
Kay Drache	Tania Malven
Elizabeth Yoder	Debra Klander
Lynda Pauling	Gian Dodge
Linda Crosby	Jan Best
Wanda Ballentine	David Klander
frank florin	Tony Janisch
Melinda Suelflow	Mary Johannsen

Attachment B

Signatories to Water Legacy Form Letter Comments regarding the Draft Permit

Brad Jolly	barbara stamp
Kristin Tuenge	Robert Bullis
Brenna Busse	Sarah Hayes
William Dustin	Mary Creighton
Terry J. Williams	Theresa Flinck
Dwight and Ann Ericsson	Ramona Kopnick
Joan Hughes	Kathy Wood
Tonia Kittelson	J Blagen
gail frethem	gerry fuller
Robert Schmitz	Carmine Profant
Sandra Wing	heidi uppgaard
Ralph Karsten	Simone Livingwell
Sandra Wing	Julie Pierson
AmyLeo Barankovich	Gretchen Bratvold
Jerry Giefer	Shannon Selz
Michael Beasley	Sue Hawk
Gayle Cole	Catherine Dahir
Helen & Paul Baumgartner	Janice Johnson
Karen Manthey	John Linnerson
Jane Gates	Mary Davis
Craig Moody	Sarah Reed
Elizabeth Treher	margot Monson
Pamela Martin	Andrea Sather
Barb Powell	Elton and Emily Brown
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